COMPLEMENTARY AND ALLOPATHIC APPROACHES TO HEALTH CARE: OTITIS MEDIA AS EXEMPLAR

by

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TABLE OF CONTENTS

Page

1. A DEMAND FOR ALTERNATIVES 1
   A Current Trend In Health Care 2
   Background Of Allopathic And Alternative Healing 4
      Allopathic Healing 4
      Alternative Healing 5
   A Call for Research 6
   Alternative Care, Holistic Paradigms, and Nursing 9
   Nurses as Mid-Level Providers 10

2. ALLOPATHIC APPROACHES TO OTITIS 11
   Prevalence and Significance 11
      Terminology 12
   Basis for Treatment Controversies In Otitis Media 14
      Case Definitions 14
      Opposing Studies and the Pursuit of Truth 15
      Cultural Factors and Treatment Approaches 16
      Antibiotic-Related Concerns 18
   Otitis Media Treatment Recommendations 19
      Fever 19
      Treatment Variations: Antibiotics vs. No Intervention vs. Surgery 21
   Analysis of Allopathic Approaches 25
      Diagnostic Certainty 25
      The Possibility of Unnecessary Surgery 26
      Pharmaceutical Industry and the Practice of Medicine 27
      The Cost of Health Care: Are Patients
         Getting Their Money's Worth? 28
      Profitability and Quality Care:
         Are They Mutually Exclusive? 29
      Synopsis of Criticisms 30

3. COMPLEMENTARY THERAPIES AND OTITIS MEDIA 31
   Homeopathy 32
      Like Cures Like 33
      Law of the Infinitesimal Dose 33
      Illness is Specific to the Individual 34
      History and Progress of Homeopathy
      in the Western Healing Culture 37
      Homeopathy In Relation to Otitis 38
      Access to Homeopathic Remedies 41

TABLE OF CONTENTS--Continued

Page

Environmental Medicine 41
Nutrition and Allergies 42
Building-Related Illness 44
Environmental Medicine In Relation to otitis 47
Botanicals 47
The Role of Polysaccharides in Botanical Medicine 49
Echinecea 50
Hydrastis 51
Astralagus 51
Ear Drops and Tea 52
Craniosacral Therapy 53
Different Craniosacral Therapies and Mechanisms of Action 54
Touch and Healing 56
Analysis of Complementary Approaches 57
Dissenting Opinions 57
Witch Hunts and Miracle Cures 58
Creation of the Office of Alternative Medicine 61

4. THE RESEARCH DEBATE 63
Nursing and Allied Sciences' View of Research Methodology 64
Changes in Scientific "Truths" 64
Nursing and "New" Science 65
New Research Methods Sought 66

5. SUMMARY AND DISCUSSION 70
Summary 70
Discussion
Power Relationships 72
Health Care Changes and Nursing 73

REFERENCES CITED 75

APPENDICES 87

Appendix A--Permission To Reproduce 88
Appendix B--Written Correspondence 93
Appendix C--Homeopathic Catalog Examples 98
Appendix D--Table: Indoor Pollutants and Toxins 105

LIST OF TABLES

Table

1. Number (percentage) of Patients Given Antibiotics for Acute Otitis Media by Country and Age 16

2. Number (percentage) of Patients Prescribed Antibiotics for Different Periods According to Country and Age..... 22

3. Suggested Questions to Determine Temperament Attributes..... 35

4. Indoor Pollutants and Toxins..... 45

LIST OF FIGURES

Figure

1. Homeopathic Treatment Algorithm for Acute Otitis Media in a Child..... 39

2. Homeopathic Treatment Algorithm for Otitis Media Without Effusion in a Child..... 40

ABSTRACT

Currently, there is a revolution occurring in the health care field in response to dissatisfaction with the quality of care provided by the allopathic health care system. The dissatisfaction can be observed in the millions of people in the United States seeking complementary health care . This paper is in response to the abundant interest people worldwide are showing in complementary healing modalities. The purpose of this paper is to familiarize health care providers with the differing ways allopathic and complementary practitioners approach illness. Otitis media was the exemplar chosen to facilitate a comparison between treatment approaches using allopathic and complementary healing methods. The review and analysis of the literature uncovered a dilemma in regards to complementary medicine seeking legitimacy in the current medical system. Complementary practitioners are regularly criticized for their lack of scientific evidence supporting their healing modalities, yet the mainstream research methods used in allopathic medicine are outdated and inadequate for evaluating many types of complementary medicine.

The movement of increasing numbers of nurses into positions as mid-level providers in a predominantly allopathic system has resulted in transformation of patient approaches in the primary care setting. Additionally, because nursing shares values with both allopathic and complementary medicine, nurses are in a particularly good position for being change agents and promoters of meaningful research.

CHAPTER 1

A DEMAND FOR ALTERNATIVES

Currently, there is a revolution occurring in the health care field. This health care revolution is being led at a grass roots level by the general public in response to dissatisfaction with the quality of care provided by the allopathic health care system. This dissatisfaction can be observed in the millions of people in the United States seeking complementary health care (Eisenberg et al., 1993). This paper is in response to the abundant interest people worldwide are showing in complementary healing modalities.

The purpose of this paper is to familiarize health care providers with the differing ways allopathic and complementary practitioners approach illness. Comparing allopathic and complementary healing methods across one specific and widespread complaint will result in a better understanding of how these two treatment philosophies approach healing and health. In this case, otitis media will be used as the example to help create a clearer picture of the two treatment approaches. Otitis media was chosen because it is the most common reason for office visits in the pediatric population, affecting millions of children every year (Nsouli et al., 1994).

Chapter 1 is a general overview of complementary and allopathic medicine, the increasing demand for complementary healing methods, and introduces the relationship of research and nursing to the two. Chapter 2 is devoted to allopathic attitudes and treatment of otitis while chapter 3 describes common complementary approaches. Prevalent themes that critics raise, both insiders and outsiders in the fields, will be addressed at the end of chapters 2 and 3. The topic of methodology in health sciences research is discussed in

chapter 4. Chapter 5 concludes the paper with a synopsis of the paper and a discussion of the role of nursing in the complementary medicine debate.

An overview of the literature reveals an obvious need for clarification of terminology. The predominant medical model in the United States is referred to as western, allopathic, conventional, orthodox or traditional medicine. The alternative healing modalities are referred to as non-conventional, alternative, non-orthodox, non-traditional, complementary or holistic. In order to simplify the terminology and facilitate comprehension, the terms allopathic and complementary have been chosen to represent the two approaches to health care.

A Current Trend In Health Care

A study by the New England Journal of Medicine in 1990 found that one in three Americans used complementary therapies and a third of those saw complementary practitioners. Extrapolation to the U.S. population indicates that approximately 425 million visits were made to complementary therapists that year. An average charge per visit was $27.60 with an annual expenditure of $13.7 billion, three quarters of which was not covered by insurance and, therefore, paid out of pocket (Eisenberg et al., 1993). The trend does not seem to be limited to the United States. A similar study done in Great Britain in 1991 resulted in nearly identical findings. Millions of British paid billions of dollars in their pursuit of complementary therapies (Trevelyan, 1993). The same trend was shown in Israel, and there is increasing evidence that this is a worldwide trend (Borkan, Neher, Anson, & Smoker, 1994).

A key indicator of the changing status of complementary medicine can be seen in insurance coverage. An example of this can be seen in the practice of chiropracty. Just a decade ago, chiropractors were referred to as "quacks" by the American Medical Association (AMA) (Office of Technology Assessment, 1990). The AMA made a

concerted effort to outlaw the practice of chiropracty. Despite this, their treatments are widely accepted today to the point where insurance coverage is becoming commonplace. Additionally, insurance companies are covering complementary treatments for illnesses such as heart disease when they previously would have only covered the more standard treatments such as angioplasty or bypass surgery. One major reason for this radical change? Economics (Cowley, King, Hager, & Rosenberg, 1995).

An example of how economics dictate therapies covered by insurance involves Mutual of Omaha, a large, mainstream insurance provider. Mutual of Omaha is supporting research at the Preventive Medicine Research Institute (PMRI) in California. PMRI was founded and is directed by Dr. Dean Ornish. Based on research by Ornish on new approaches to heart disease, a treatment program for coronary artery disease was developed in which lifestyle changes were shown to not only prevent heart disease but reverse it (Ornish et al., 1990). Program participants committed to a yearlong immersion involving meditation, group support, exercise, and a strict vegetarian diet. Mutual of Omaha agreed to cover two year treatment costs for 200 volunteer patients enrolled in Dr. Ornish's program. More than the impressive clinical data, the monetary savings realized by using this program has fueled considerable enthusiasm. Mutual of Omaha has already saved $6.50 in costs of conventional medical care for every dollar it has spent on this complementary approach. Because of the likelihood for the need for repeated operations when using conventional methods to treat heart disease, they estimate the savings to be closer to $20 saved in the long run for every $1 spent. With the apparent success of this program, fifteen other insurance companies are making plans to administer the same program (Cowley, et al., 1995).

Many believe that the American health care system is being crushed by its own economic weight. However, cost seems to be one small factor in the move toward complementary therapies. This is demonstrated by the fact that people are willing to spend

billions of dollars out of pocket every year--above and beyond their insurance premiums and deductibles--to get the kind of care they want. The dissatisfaction appears to lie more with the kind of care people are receiving than cost. There is a general feeling that the care is outdated and less than comprehensive or complete. It is also seen as being inadequate in its ability to treat many of the stress-related or chronic illnesses seen today (Booth, 1994; Randolph, 1979; Seaward, 1994; Spigelblatt, Laine-Ammara, Pless, & Guyver, 1994); Swackhammer, 1995; Trevelyan, 1993. To understand the source of dissatisfaction, a review of how allopathic medicine views health and its role in the administration of health care is helpful.

Background Of Allopathic And Alternative Healing

Allopathic Healing

Allopathic medicine was originally based on Hippocratic principles. "Hippocratic practitioners assumed that everything in nature had a rational basis; therefore, the physician's role was to understand and follow the laws of the intelligible universe. They viewed disease as an effect and looked for its cause in natural phenomena -- air, water, food, etc. They used the term *vis medicatrix naturae*, the healing power of nature, to denote the body's ability to heal itself" (Murray & Pizzorno, 1990, p 4).

Institutionalization of the conventional biomedical viewpoint, downplaying supportive medicine and natural healing, occurred after the Flexner Report of 1910 was released (Borkan, et al., 1994; Kaufman, 1971). This report led the movement toward "modern scientific medicine" based on the philosophies of Descartes and Newtonian physics. A mechanistic paradigm resulted. This paradigm compares the universe and its components to an enormous clock where it and its components operate in a sequential form. The mechanistic (also known as reductionist) model attempts to explain all phenomenon through the interpretation of stimuli by the five senses. If a part of the system fails, that specific part would be analyzed and repaired. In applying these philosophies to

the human organism, the medical field trains its physicians to focus on the symptoms or malfunctioning region of the body and treat it. (Seaward, 1994) The phenomenon of large numbers of physician specialists (i.e., neurology, endocrinology, oncology, or gynecology) exemplifies the compartmentalization that has come to dominate today's medical practices. Currently, western medical practitioners are criticized for no longer seeing the forest for the trees. There is so much focus on illness and reducing people into dysfunctioning body parts that prevention of illness, treatment of underlying causes, and dealing with patients as whole, meaningful human beings is perceived by many as being lost. People still express confidence in allopathic medicine when considering treatment for traumatic or serious acute illnesses. It is in the area of chronic illness that dissatisfaction with the limitations of western medicine has been expressed. This is manifested in the impressive movement towards complementary therapies and therapists seen today (Buckman & Lewith, 1994; Spigelblatt, Laine-Ammara, Pless, & Guyver, 1994).

Alternative Healing

Similar to the original views of western medicine, complementary therapies are based on the Hippocratic viewpoint. This viewpoint is premised on the natural healing powers of the body and the importance of looking holistically at an individual who is ill. Holism considers aspects of the mind, body, spirit, and emotion as playing an integral role in the enhancement or suppression of an individual's well-being (Edelman & Mandle, 1994; Seaward, 1994). Holism is the common thread that connects the vast array of complementary therapies. Many of these therapies have been in use longer than conventional medicine and are widely accepted in many parts of the world. These include acupuncture, homeopathy, naturopathy, osteopathy, ayurvedic medicine, and aromatherapy (Booth, 1994; Trevelyan, 1993). Others which are relatively new with a much smaller following include applied kinesiology, flower remedies, neurolinguistic programming, guided imagery, and chelation therapy.

In considering the many complementary therapies available today, supporters and critics alike pose some important questions. Some of the concerns voiced are about quality control, the need for regulations to protect the consumers, and the need for proof of efficacy. Many of the popular complementary products, particularly botanicals in use today have no standards or quality requirements so the consumer has no assurance of the quality or actual content of what they are buying and ingesting ("Herbal Roulette", 1995; Marwick, 1995).

The training requirements for complementary practitioners vary considerably, both within the specific therapies and across most complementary therapies in general. For example, osteopaths or naturopaths attend years of specialized training and may be required to pass a certification examination depending on the state in which they are licensed. Conversely, a foot reflexologist or massage therapist can attend a few weekend training sessions and begin a practice without having to pass a certification process (Fisher & Ward, 1994; Trevelyan, 1993).

A Call for Research

The need for credible research in the field of complementary healing has been pointed out by proponents and opponents alike. The very nature of many complementary healing modalities make it nearly impossible to perform any kind of quantitative studies. McGourty and Hotchkiss (1993) outline some of these difficulties including the inability to provide "blindness" when administering treatment modalities like acupuncture, or dietary and manipulative treatments:

> The experimental method lacks the capacity to interpret the environment that is unique in each individual case and the role of the patient in illness and recovery. Holistic approaches integrate a wider range of data in diagnosis. No symptom or sign provides a single objective reading from which a diagnostic conclusion may be made. Any symptom gathered from the patient can be interpreted subjectively only in relation to other symptoms and signs. Furthermore, conventional classification of diseases may not adequately describe the signs, symptoms and syndromes of illnesses which are more likely to be seen in complementary practice.(p.42)

In addition, the standardization of treatment needed to provide for experimental research would require removal of essential elements of some therapies. For example, standardizing the acupuncture points for research on acupuncture would eliminate the flexibility of needle placement required for treatment (McGourty & Hotchkiss, 1993). Nonetheless, this is the "hard" evidence that allopathic medicine is looking for in order to convince their practitioners they should be using and/or referring their patients for complementary treatments. Allopathic and complementary providers alike acknowledge the fact that little of the widely used medical interventions have the benefit of this kind of rigorous testing. It is estimated that only a fraction of allopathic interventions currently accepted as standard medical practice are supported by this kind of scientific evidence (Berman et al., 1995; Buckman & Lewith, 1994; Ullman, 1993).

Holistic ideology and complementary therapies are not completely lacking in credible scientific research. Studies on psychoneuroimmunology have revealed some measurable associations between aspects of individual immune function and laughter, positive attitude and coping skills (Nguyen, 1991). Studies reported by Cousins (1979) found that hope, love, will to live, purpose and festivity were elements in an individual's ability to fight serious disease. Nguyen (1991) described several studies which found the levels of natural killers in the body were directly correlated with coping skills, and learned or inherent optimism.

A French research team completed a study in 1988 to determine how dilute an antibody could be while still being able to evoke a biological response. They found evidence that even when diluted to the point that not a single molecule of an antibody could exist in the sample, the antibody was still able to produce a response (Davenas, et al., 1988). This lends some credence to a major premise of homeopathy. Homeopathy is based on the assumption that if you give substances which mimic the presenting complaint in an infinitesimally dilute dose, you will facilitate the body's ability to heal itself

(Harrison, 1989). Skeptics of homeopathy contend that the remedies are so dilute (to the point where a single molecule of the original substance can not be found), any effect is strictly placebo. The French study demonstrated that it could, in fact, be biochemical rather than placebo response. This study was published by Nature, a widely respected scientific journal, after it had been replicated by five other laboratories. Despite its successful replication, the experiment's results were later deemed fraudulent by a team sent by the journal in an effort "to test for trickery" (Maddox, Randi, & Stewart, 1988). This was an interesting choice of words as Mr. Randi, of the Nature team, was actually a magician as well as having some research background. None of the Nature team had scientific research backgrounds, so their criticisms were viewed as lacking credibility by the five research teams whose work they evaluated.

Despite the skepticism and lack of empirical data to support it, there seems to be a substantial number of physicians who subscribe to complementary therapies. A study of 250 practicing physicians found that half either regularly practiced or have tried complementary therapies. The interviewees specifically requested anonymity regarding this aspect of their practice as they feared accusations of "quackery" from their peers (Swackhammer, 1995). Apparently there exists a pervasive feeling of a witch hunt fed by the animosity between the two camps. The head of the French research team whose dilution study was published and then condemned in Nature was quoted as saying "Salem witch hunts or McCarthy-like prosecutions will kill science...[there] is no crime but *science as usual* [italics added] and only the future knows" (Benveniste, 1988, p. 291). Benveniste points out, the tragic down-side of this will be the lack of progress towards more effective and comprehensive patient care.

Alternative Care, Holistic Paradigms, and Nursing

The increased sense of participation, control, and hope that complementary therapies instill in its patients has long been considered important components of holism and healing by nurses. The historical support of a holistic emphasis in nursing was first recorded by Florence Nightingale. In 1859, she wrote that the role of nursing was to put patients in the best condition in order that nature could act upon them (Bullough & Bullough, 1984; Randolph, 1979).

More recently, nursing has embraced systems theory as a cornerstone for nursing theory. Systems theory postulates that the parts of any entity are interconnected. Because of this connection, it is impossible to accurately evaluate a part without considering the whole (Nguyen, 1991; Viney, Clarke, & Benjamin, 1986). Nursing theory has consistently stated that healing results from treating a person as a whole entity, not isolating and treating the diseased body part. The concept of holism is thought to be "especially congruent with the essential nature of nursing" (Johnson, 1990, p. 130). This point is corroborated in the recent nursing literature (Johnson, 1990).

There is also evidence that a paradigm shift towards holism has occurred in health care in general and in nursing specifically. This shift is away from an emphasis on empiricism and a movement toward logic as a theoretical orientation, a "more holistic and humanistic approach" (Silva & Rothbart, 1984). Kuhn (1970) postulates that a new paradigm comes into being only when the existing or ruling paradigm is obsolete or inadequate in meeting the needs of a social system. Such is the case in our American health care system today. Aspects of the health care crisis, according to Kuhn's framework, include the economic demands of the system in place, perceived responsiveness to the society's health care needs, and the credibility and performance of its practitioners. Kuhn believes that the delivery of health care will change radically as a result of the changes needed to resolve this crisis. He contends that when a new idea is coupled with the

recognition of a need, practice alternatives emerge which represent new concepts and areas of research (Kuhn, 1970).

Nurses as Mid-Level Providers

Nursing has long been a proponent of the holistic approach to health and healing. As nurses move into mid-level provider roles, the extent to which they incorporate some of the complementary healing modalities which are congruent with nursing practice needs to be considered and evaluated. Health care consumers are actively seeking complementary healing regimens. In their role as patient advocates, nurses need to evaluate whether complementary healing modalities are safe and/or effective as well as building a database for clinical or empirical knowledge (Zagorsky, 1993). Since there is little in the way of hard-core scientific research on otitis and complementary therapies, judgment will have to be based mostly on anecdotal evidence from parents and complementary providers. Another source includes articles in various medical journals. However, very few of these are research articles but rather reports on current practices and trends.

The intent of this paper s to familiarize health care providers with the differing ways allopathic and complementary practitioners approach illness. The background and theories regarding their mechanism(s) of action will also be explored, using otitis as exemplar to facilitate this exploration. Additionally, an assessment and comparison will be made of some of the allopathic and complementary treatment regimes currently considered the standard of care. This evaluation of both healing approaches will provide a rich contextual basis upon which to assess their efficacy and applicability.

CHAPTER 2

ALLOPATHIC APPROACHES TO OTITIS

The allopathic approach to otitis media is fraught with confusion and controversy, both nationally and internationally. The first part of this chapter will explore the basis of these controversies while describing the debate surrounding widely accepted allopathic treatment modalities. To facilitate understanding, an explanation of terms and acronyms found in the literature describing otitis media is provided.

First, the prevalence and significance of otitis media for Americans and their health care system will be discussed. Several otitis-related controversies will be addressed in this chapter including variations on case definition, studies with opposing results, and cultural variations in treatment approaches. Allopathic treatment recommendations will be presented including management of otitis-related fever, information regarding pharmacological, non-interventionist, and surgical approaches.

The last section in this chapter will provide an examination of allopathic approaches to otitis and health care in general. It will focus on diagnostic certainty, unnecessary surgery, the pharmaceutical industry's influence on the practice of medicine, health care costs, and quality care.

Prevalence and Significance

The prevalence of otitis media in the pediatric population makes it a major health issue in the United States, both in terms of annual cost of treatment and the number of

children and their families impacted. It is now estimated that two-thirds of American children are diagnosed with otitis by age two. This makes it the prevailing diagnosis of the pediatric population and the second most common diagnosis in the entire health care system (Kleinman, Kosecoff, Dubois, & Brook, 1994). More than 30 million outpatient visits are made per year because of otitis media at an annual cost of $1 billion, with an additional $1 to $2 billion spent annually on surgical treatment. Surgical placement of tubes is the most common minor surgery done in America (Kligman, 1992). Families often undergo considerable amounts of stress coping with the acute or chronic nature of otitis media. Not only are they concerned with their child's well-being, but they may also have financial concerns related to lost wages and job security if they have to take time off from work to care for their child (Schmidt, 1990). From a more individual perspective, some argue that the sequelae of otitis may lead to permanent hearing deficits and learning difficulties (Terris, Magit, & Davidson, 1995). The impact of this seemingly minor pediatric complaint should not be underestimated.

Terminology

A definition of otitis media and related diagnosis is necessary for an understanding of the concepts and controversies which will be explored. Different references often have a varying consensus as to what the "correct" terminology should be, therefore these definitions may not be completely applicable to all journal articles. The most widely accepted definitions found in the literature have been used.

Otitis media (otitis) is a broad term meaning inflammation of the middle ear. It does not technically mean there is an infection and is often used to encompass the various types of middle ear afflictions. Effusion refers to the escape of fluid into the middle ear. Otitis media with effusion is thought to be due to an obstructed or dysfunctional eustachian tube resulting from incomplete resolution of an acute otitis media, allergies, or enlarged lymphoid tissue in the surrounding area. When the middle ear becomes blocked, the

middle ear space absorbs the air which then creates negative pressure. This creates a vacuum which draws mucosal transudate into the middle ear. The general term for this condition is otitis media with effusion (Agency for Health Care Policy and Research, 1994; Schmidt, 1990).

The type of fluid present in the middle ear is referred to as either serous, mucoid or purulent. Serous otitis media (SOM) indicates there is a collection of thin, watery fluid in the middle ear which does not usually contain harmful bacteria. Mucoid otitis media (MOM) is also commonly known as "glue-ear." As the term "glue-ear" describes, there is an accumulation of a thick, sticky fluid in the middle ear which is thought to have been present for a prolonged period of time. Purulent otitis media (POM) is also referred to as suppurative or, more commonly, acute otitis media (AOM). AOM is characterized by the presence of many white blood cells in the middle ear normally caused by an acute bacterial or viral infection. The general term, otitis media with effusion (OME) is also called silent middle ear effusion and is often used interchangeably with serous otitis media (SOM) and mucoid otitis media (MOM). Although the effusion is often sterile, half the time a pathogenic bacteria is present. In those cases, the term purulent or acute otitis media could theoretically be applied to otitis media with effusion. However, POM and AOM is typically used to describe the acutely infected middle ear. SOM, MOM, and OME all refer to a less acute presence of middle ear fluid (Agency for Health Care Policy and Research, 1994; Schmidt, 1990).

The focus of this paper will be on AOM and OME since these are the two conditions most studied and referred to in the research. Otitis is used if there is no distinction made between the two in the context in which it is used.

Basis for Treatment Controversies In Otitis Media

The most hotly debated issue surrounding otitis pertains to that of treatment: Who needs to be treated and with what? Definitive guidelines are confused by the the lack of a clear case definition. This section will explore variations in case definition, studies with opposing results, and cultural variations in treatment approaches. The influence of culture is woven into a discussion of national versus international guidelines and practices for treating otitis.

Case Definitions

There is little consensus within the medical community as to what constitutes a treatable case of otitis or what that treatment should be. According to Froom et al. (1993), there is no "gold standard" for the diagnosis of AOM. Their survey demonstrated that of the 165 pediatricians interviewed, 147 different sets of criteria were used to establish a diagnosis of AOM . Additionally, they evaluated 43 studies on AOM to determine what diagnostic criteria were used among researchers. They found that out of the 26 studies which described their diagnostic criteria, 18 different sets of diagnostic criteria were used. In 17 of the 43 studies, no diagnostic criteria were even identified (Froom, et al., 1993). Examples of diagnostic criteria include presence of fever or pain, and bulging or redness of the tympanic membrane.

A similar evaluation of the literature was done by Claëssen, Appelman, Touw-Otten, De Melker, and Hordijk (1992) with the same results. They found poorly defined diagnostic criteria and numerous methodological flaws in the studies they evaluated. Because of the controversial nature of otitis treatment, they concluded that it was imperative that well done, placebo-controlled studies be performed to better identify the effective approaches (Claessen, et al., 1992).

Opposing Studies and the Pursuit of Truth

A review of the literature relating to otitis reveals a number of contradictory studies published in refereed medical journals. One example of these are studies published in Pediatric Infectious Disease Journal and Postgraduate Medicine. The former published a report that medical management of AOM and OME was associated with less frequent anatomic and audiologic sequelae than with surgical management (Pichichero, Berghash, & Hengerer, 1989). The latter (Postgraduate Medicine) published opposing conclusions. Those researchers found that persistent OME may have a significant impact on language, speech, and intellectual development and is best treated surgically (Terris, Magit, & Davidson, 1995). Another example involves a study published in Pediatrics which found no association between a child's experience with otitis media and intelligence testing or academic performance (Roberts, Burchinal, Davis, Collier, & Henderson, 1991). Pursuit of "the one correct answer" in most questions asked of allopathic medicine will typically lead the questioner into an endless maze of conflicting answers resulting in even more questions than were originally asked. The conclusion often is that one best answer does not exist:

> Committing a type II error (rejecting a treatment that works due to lack of statistical power--i.e., insufficient sample size) might be avoided by keeping an eye on the treatment that comes out most favourably, regardless of statistical significance. (It will be rare indeed that an actually inferior treatment comes out decidedly superior, even in a small trial.)...The worst that then might happen is the acceptance of an indifferent treatment (a type I error)--neither beneficial nor harmful. Such a treatment will sooner or later be replaced by another one that is really superior. Always leaning cautiously to the side of the positive result might in the long be most beneficial to the patient...The medical profession at large might have been at once more pragmatic and more philosophical in its attitude to clinical trial results by intuitively accepting that *truth is relative and knowledge progresses slowly* [italic added]. (De Melker, Rosendaal, & Vandenbrouke, 1993, p. 621)

De Melker et al. (1993) are saying that at this point in medicine, there is not one right answer. They contend that it is a matter of which of the currently practiced "answers" is the closest to being right. There is still considerable room for exploration and study before providers decide on one exclusive approach.

Cultural Factors and Treatment Approaches

To further confound the pursuit of truth are the cultural factors inherent in medical care. An example of this is the differing approaches health care providers adopt depending on the country in which they live and practice. The provider's decisions vary not according to scientific knowledge but rather are based on cultural-medical norms (De Melker & Kuyvenhoven, 1994; Payer, 1988). Among the nine countries evaluated by Froom et al. (1990), both the diagnostic criteria and treatments chosen for AOM varied considerably. Only 31.2% of patients diagnosed with AOM were started on antibiotic therapy in the Netherlands compared with 98.2% in both Australia and New Zealand. The United States had a prescribing rate of 97.9% .

Table 1. Number (percentage) of Patients Given Antibiotics for Acute Otitis Media by Country and Age

	All patients studied	Patients prescribed antibiotics
Country:		
Australia	282	277 (98.2)
Belgium	195	166 (85.1)
Great Britain	409	396 (96.8)
Israel	532	486 (91.4)
The Netherlands	413	129 (31.2)
New Zealand	487	478 (98.2)
Switzerland	284	259 (91.2)
United States	380	372 (97.9)
Age in months:		
0-12	416	377 (90.6)
13-30	615	546 (88.8)
>31	1951	1640 (84.1)

From "Diagnosis and Antibiotic Treatment of Acute Otitis Media: Report from International Primary Care Network" by J. Froom, L. Culpepper, P. Grob, A. Bartelds, P. Bowers, C. Bridges-Webb, I. Grava-Gubins, L. Green, J. Lion, B. Somaini, A. Stroobant, R. West, and Y. Yodfat, 1990, British Medical Journal, p. 584. Reprinted with permission of the author.

Additionally, the choice of antibiotics and duration of treatment varied considerably among countries. For treatment, the Dutch physicians used the ampicillin group

predominantly while Australians chose mostly co-trimoxazole. Duration of treatment averaged eight to ten days in the United States while British physicians commonly chose five days. In Great Britain, studies have been done showing that a short course of treatment (three to five days) has comparable efficacy to a longer course (ten days) (Bain, Murphy, & Ross, 1985; Chaput de Saintonge et al., 1982). However, the same can be said for recent studies in the United States. For example, one study found no difference between a five versus ten day course of antibiotics for uncomplicated AOM (Hendrickse, Kusmiesz, Shelton, & Nelson, 1988). Antibiotics in Great Britain are prepackaged into five day aliquots which may help account for the typical five-day treatment regime One can only speculate at this point on the myriad of variables affecting physician decision-making regarding AOM (Froom, et al., 1990).

The questions raised by an analysis of otitis and other ailments have made some medical practitioners and social scientists stop and ask themselves whether they were making treatment decisions based on rational, scientific thought. Some question the appropriateness of making these decisions on an experiential or belief system basis which is inevitably affected by our cultural background (De Melker & Kuyvenhoven, 1994; Payer, 1988).

Since medical providers do not function within a vacuum, one must also consider the patient's expectations regarding their care and how that affects their provider's treatment decisions. De Melker and Kuyvenhoven (1991, 1994) have researched medical approaches for upper respiratory infections in the Netherlands and compared them with medical practices in other countries. Their studies showed a substantially decreased reliance on medications than their physician counterparts in other countries. An American physician wrote to the editor in response to De Melker and Kuyvenhoven's study (1991) of cultural and medical norms. He felt they were not taking into consideration "patient expectations that can coerce physician decisions" (Wilson, 1994, p.215). De Melker and

Kuyvenhoven's response (1994) was that patient's expectations *should* and *do* influence a provider's decisions. However, their study (and others they site) reported that physician behaviors directly influence the patient's expectations. Differences between physicians' practice, including referral and prescribing habits, are correlated with physician-related factors. Further, they found that family physicians often erroneously believed they had to do something (i.e., prescribe drugs) for their patients in order to meet the patient's expectations. In many cases, the provider believes the patient will feel cheated unless she leaves the physician's office with a treatment of some sort, typically antibiotics (De Melker & Kuyvenhoven, 1991, 1994; Schmidt, 1990).

Antibiotic-Related Concerns

The prescription of antibiotics without a rational, medical reason for it has significantly impacted infectious diseases in our generation. Mitchell and Cohen (1994) found that in the last two decades, we have witnessed a re-emergence of infectious diseases. Not only is the spectrum of infectious disease expanding, but a number of infectious diseases that were thought to be contained, are no longer. One reason given for this is the widespread use of antimicrobials. The prevalence of antibiotic use (for diagnosed bacterial infections), misuse (sporadic drug taking by patients), and overuse (prescribing antibiotics when there is no clinical indication) has led to concern regarding their diminishing effectiveness (Garrett, 1994; Mitchell & Cohen, 1994; Schmidt, 1990). The decreasing efficacy of antimicrobial drugs has resulted in higher health-care costs, increasing length of illness and mortality rates. The worldwide significance of these issues has been noted and attempts to address it are being made by international public health officials (Garrett, 1994; Mitchell & Cohen, 1994).

Otitis Media Treatment Recommendations

A compilation of studies from refereed medical journals discussing allopathic treatment recommendations is reviewed in this section. Again, the lack of consensus regarding otitis management is demonstrated. Issues to be addressed include otitis-related fever and pharmacological versus non-interventionist versus surgical approaches.

Fever

Otitis media is one of the most common diagnoses in children with fevers (Thomas, 1995; Soman, 1985). Allopathic medicine has traditionally been aggressive in its approach to fever in general. Studies of physicians and parents alike reveal they fear that an untreated fever greater than 102°-104° may result in seizures, brain damage or death (May & Bauchner, 199; Schmitt, 1980, 1984). Alternative practitioners advocate a less aggressive approach to fevers contending that it has beneficial effects (Schmidt, 1990). A literature review revealed the following.

A fever is described as a rectal temperature of 100.4° F (38° C) in infants and 100° F (37.7° C) to 101° F (38.3°) rectal temperature in children older than three months (Thomas, 1995). Based on the literature, 105° F is an appropriate cutoff for the definition of high fever as only 5% of all febrile children get as high as 105°F (Schmitt, 1980). Fevers that are considered to be dangerous or harmful begin at 106°-107° F although they rarely get that high as protective mechanisms intervene before that point is reached (May & Bauchner, 1992; Schmitt, 1980, 1984; Thomas, 1995).

Surveys of medical personnel reveal their definition of a high fever as those above 101-105° F. They advocated fever reduction for temperatures ranging from 100°-105° F. Nurses cited treatment rationale as being fever reduction, prevention of increase, and comfort promotion while physicians cited parental anxiety and comfort promotion (May &

Bauchner, 1992; Thomas, et al., 1994). Comfort promotion was the main reason the literature cited for initiation of antipyretics.

The beneficial effects of fever are well documented. Several components of the immune system (i.e., neutrophils, macrophage) are enhanced at 104° F and above. In addition to increased white blood cell activity, plasma iron concentrations are decreased which inhibits the growth of some microorganisms. The period of viral shedding, and therefore, length of illness, has been found to be prolonged with the administration of antipyretics in both animal and human studies (Doran, De Angelis, Baumgardner, & Mackowiak, 1994; Mellits, 1989; Thomas, 1995; Thomas et al., 1994). Additionally, indiscriminate suppression of fever may deprive health care providers of important clues as to the nature of the illness. Clues such as fever patterns help direct diagnostic investigations resulting in more appropriate and timely treatments (Styrt & Sugarman, 1990).

Studies show that medical providers and parents tend to aggressively treat even slight fevers based on irrational biases, myths or misinformation (Kinmonth, Fulton, & Campbell, 1992; May & Bauchner, 1992; Schmitt, 1980, 1984; Thomas et al., 1994). One of the non-mythical outcomes of fever is febrile seizures. Prevalence of febrile seizures is estimated between 2-5% of children under five with fevers. The only known risk factor associated with febrile seizures is the increased potential for developing epilepsy: 0.3-0.9% incidence of epilepsy in children without a history of febrile seizures compared to 1-4% in children with a history of febrile seizures. All of the literature reviewed negated other sequelae which are commonly associated with febrile seizures including decreased IQ, brain damage, coma, and death. Moreover, there was no evidence found supporting the commonly held belief that antipyretics therapy is effective in preventing initial or recurring febrile seizures. Two factors believed to contribute to this fact is the knowledge that febrile seizures typically occur before the parents even knew their child had a fever.

Secondly, febrile seizures have been found in cases where there was a very moderate temperature elevation making them difficult to predict and thus, prevent (Counselman, 1989; Nelson, & Ellenberg, 1978; Schmitt, 1980, 1984; Styrt & Sugarman, 1990; Thomas, 1995; Thomas et al., 1994).

The overall conclusions found in the literature regarding treatment of fever was that it should be treated if the child is uncomfortable due to the fever or if it is a high fever (104°-105° or above) even if the child is asymptomatic. Because of the increased potential for illness becoming more serious, infants under three months need to be treated more aggressively including a medical evaluation. Medical follow-up for children over three months was based on their medical history, apparent level of illness, and temperature (Baker, Bell, & Avner, 1993; Baraff, et al., 1993; May & Bauchner, 1992; McCarthy, 1993; Schmitt, 1980, 1984; Thomas, 1995; Thomas et al., 1994). The distinction between fever exacerbation and non-treatment was made: dehydration and over-insulation should be avoided as they can lead to heat stroke secondary to the exacerbation of physiological effects of fever (Styrt & Sugarman, 1990). Nonsteroidal anti-inflammatories (NSAIDS-i.e., aspirin or ibuprofen) should be avoided. Not only is there an association with Reye's Syndrome in febrile children given aspirin, but other research has shown that NSAIDS administration can contribute to the development or prolongation of OME and other viral-related illnesses (Graham, Burrell, Douglas, Debelle, & Davies, 1990; Jung, 1988).

Treatment Variations: Antibiotics vs. No Intervention vs. Surgery

Once otitis is diagnosed, treatment recommendations vary considerably. The three main recommendations found in the literature were antibiotics, a hands-off or monitoring approach, and surgical intervention. The approaches for AOM and OME varied as the former is an acute infection and the latter is a chronic effusion of fluid behind the ear. The distinction between the two will be made as appropriate throughout this discussion.

Antibiotics vs. No Treatment. The antibiotic controversy involves the appropriate duration of treatment, whether antibiotics improve the course and outcome of the infection, and whether they are better than surgery for persistent infections or effusion. In the international study of AOM treatments described previously, American physicians prescribed an eight to ten day course of antibiotics 91.8% of the time while an average of only 31.3% physicians in the other seven countries surveyed used that long of a course. While only 1.1% of American physicians wrote five day prescriptions, an average of 27.1% of physicians in other countries surveyed prescribed the five day course (Froom et al., 1990).

Table 2. Number (percentage) of Patients Prescribed Antibiotics for Different Periods According to Country and Age.

	Duration of treatment (days)			
	5	6-7	8-10	other
Country:				
Australia	68 (25.3)	119 (44.3)	77 (28.6)	5 (1.9)
Belgium	41 (25.5)	25 (15.5)	94 (58.4)	1 (0.6)
Great Britain	195 (50.1)	141 (36.3)	26 (6.7)	27 (6.9)
Israel	43 (9.0)	135 (28.2)	286 (59.8)	14 (2.9)
The Netherlands	37 (30.1)	82 (66.7)	3 (2.4)	1 (0.8)
New Zealand	114 (24.6)	135 (29.2)	157 (33.9)	57 (12.3)
Switzerland	65 (25.3)	103 (40.1)	75 (29.2)	14 (5.4)
United States	4 (1.1)	23 (6.3)	336 (91.8)	3 (0.8)
Age in months:				
0-12	56 (15.3)	105 (28.7)	188 (51.4)	17(4.6)
13-30	95 (18.0)	137 (25.9)	268 (50.8)	28(5.3)
>31	416 (25.8)	521 (32.3)	598 (37.1)	77(4.8)

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Studies evaluating the effectiveness of short course treatment (three to five days) versus a ten-day course found no significant difference in efficacy, recurrence or treatment

failures between the two (Bain, Murphy, & Ross, 1985; Chaput de Saintonge et al., 1982; Hendrickse, Kusmiesz, Shelton, & Nelson, 1988). The literature review did not reveal studies which addressed the advantages of ten-day treatments. However, the three studies cited above do discuss occasions when it is appropriate to use the longer treatment (i.e., presence of ruptured tympanic membrane or inadequate resolution of symptoms by day four or five of antibiotic treatment).

The consensus for defining OME is that it is the presence of middle ear fluid for at least three consecutive months (Agency for Health Care Policy and Research, 1994; Maw & Bawden, 1993; Otitis Media Guideline Panel, 1994). While the majority of cases resolve on their own, the expected time of spontaneous resolution varies greatly. A report by the Agency for Health Care Policy and Research (1994) estimated resolution around 6 months on average.

A twelve year study found resolution of OME in two to three years with a hearing loss over an average of eighteen months (Maw & Bawden, 1993). If OME exists in conjunction with a significant hearing loss (20 decibel), initiation of treatment is recommended. Studies list hearing loss and delayed intellectual development as important reasons to treat OME (Mandell, Rockette, Paradise, Bluestone, & Nozza, 1992; Terris, Magit & Davidson, 1995). The Otitis Media Guideline Panel (1994) also acknowledges that this is a compelling argument for treatment of OME. However, they concluded that there is no reliable evidence that OME has long-term effects on language or learning. Two studies in the late 1980's found no correlation between a child's experience with OME and later verbal and cognitive development or academic performance (Roberts, Burchinal, Davis, Collier, & Henderson, 1991; Roberts, Sanyal, Burchinal, Collier, Ramey, & Henderson, 1986).

Although antibiotics are widely prescribed for AOM, studies show equivocal response. Appelman, Claessen, Touw-Otten, Hordijk, & De Melker (1991) found no

difference in resolution between the AOM group treated with antibiotics and the placebo. Froom et al. (1990) found shorter recovery rates in patients who did not receive antibiotics compared to those who did. Of some concern in that same study were the findings regarding diagnostic certainty of AOM among physicians. Children age twelve months and less had the lowest diagnostic certainty while being the age group with the highest incidence of otitis media diagnoses.

Van Buchem, Dunk, and Van t'Hof (1981) published a double-blind study which evaluated the recovery course of children treated with antibiotics and those with nothing other than comfort measures. The only difference between the two groups was the longer duration of ear discharge in some of the untreated group. Recurrence and hearing loss appeared to be unrelated to treatment modality. A similar study was later conducted with an impressive sample population of 4,860 children with AOM. The researchers evaluated the effectiveness of symptomatic treatment (nose drops and analgesics). They found that 90% experienced complete resolution within a few days (Van Buchem, Peeters, & Van't Hof, 1985).

Surgery. Surgical treatment is equally controversial. One source reports adenoidectomy as being an excellent approach to OME (Maw & Bawden, 1993) while another source does not concur (Otitis Media Guideline Panel, 1994). One study demonstrates that tympanostomy tubes are preferential for preventing recurrent AOM (Casselbrant, et al., 1992). Animal studies evaluating otitis and tympanostomy tubes found more inflammation and secretory activity in the ears with tubes (Jung, 1988). Pichichero et al. found that medical management of otitis resulted in less anatomic and audiologic sequelae than the surgically managed counterpart (tubes) (Pichichero, Berghash, & Hengerer, 1989).

The controversies surrounding the surgical treatment of otitis pertain to whether or not surgery is an effective treatment, but also whether the surgical candidates have been

appropriately chosen. Kleinman, Kosecoff, Dubois, and Brook (1994) evaluated the clinical reasons for tube insertion by interviewing otolarygologist's in 49 states. By extrapolating their findings, they concluded that several hundred thousand children a year are getting tubes placed in their ears which offer them no demonstrated advantage over less-invasive treatments.

Analysis of Allopathic Approaches

This section will analyze general allopathic methods commonly employed to manage illness, and those specific to otitis management. It will focus in on criticisms and discrepancies brought out in the review of literature. Criticisms of allopathic medicine specifically pertaining to the management of otitis include the lack of diagnostic certainty in diagnosing pediatric otitis and inappropriate use of surgical interventions. General comments will address the sphere of influence guiding medical practices such as the pharmaceutical industry and profit concerns.

Diagnostic Certainty

Froom et al. (1990) demonstrated that children twelve months and under were the most difficult to diagnose otitis accurately. According to the physicians surveyed in seven countries, only 58% of patients age zero to twelve months diagnosed with otitis were believed to have a "certain" diagnosis. Factors which contribute to diagnosis difficulty in the twelve month and under age group relate to examination variants: small diameter of ear canal, horizontal plane of the tympanic membrane, lack of cooperation. Additionally, if a child cries during an otoscopic exam, it causes a reddening of the tympanic membrane which is considered a primary diagnostic sign of otitis. Patients age thirteen to thirty months were 15% more likely (odds ratio 1:15) and those over thirty months were 53% more likely (odds ratio 1:53) to have a "very certain" diagnosis compared to those twelve months and younger. These findings are particularly disconcerting when one considers the

fact that the age with the highest incidence of otitis diagnoses (twelve months and under) is also the age with the least amount of certainty as to the accuracy of that diagnosis (Froom, Culpepper, Grob, et al., 1990). The implication here is that there may be a lot of children who are diagnosed with otitis who do not have it.

The Possibility of Unnecessary Surgery

Another trend revealed in literature related to allopathic approaches to otitis is inappropriate tympanostomy tube placement. A study by Kleinman et al. (1994) mentioned earlier, concluded that several hundred thousand children a year are getting tubes placed in their ears which offer them no demonstrated advantage over less-invasive treatments. Their study definition of appropriate tube placement includes effusion documented for over 120 days (despite treatment with antibiotics) but with *no* demonstrated hearing loss (Kleinman, et al., 1994). According to treatment guidelines for OME developed by the Agency for Health Care Policy and Research (AHCPR, 1994), it is *in*appropriate to consider surgery in a chronic case of OME *unless* there is documented hearing loss. This suggests that Kleinman's conclusion is conservative. Kleinman's figures are based on children with no demonstrated hearing loss so if the criteria adhered to the AHCPR recommendations for tube placement, even fewer children would be considered appropriate tube placement candidates. This would raise the estimated number of inappropriate tube placements per year.

Tympanostomy and/or myringotomy comprise the leading surgical procedure performed on children, the main risk factor being general anesthesia. Inappropriate tympanostomy tube insertion pose an unnecessary anesthesia risk in addition to the costs incurred (Kleinman, et al., 1994).

Pharmaceutical Industry and the Practice of Medicine

Allopathic medicine relies heavily on prescription drugs as a primary means of patient care. The pharmaceutical industry is a highly profitable, multi-billion dollar industry with considerable resources available to invest in product development, research and marketing. Within the last decade, the medical profession has seen increasing criticism about the relationship between physicians and the pharmaceutical industry. The critics, physicians and non-physicians alike, contend that the relationship is ethically unsound (Goldfinger, 1990; Rawlins, 1990; Smith, 1986; Waud, 1992). The American College of Physicians made a statement in that regard:

> It is difficult to estimate the number of dubious interactions between physicians and the pharmaceutical industry....Physicians often accept payments, gifts, or hospitality from drug or equipment manufacturers. The issue here is not the gifts or honoraria in themselves, but rather that excessive or inappropriate rewards impair public confidence in the integrity and judgment of the profession and may compromise physician clinical judgment. (American College of Physicians, 1990, p.625)

Goldfinger (1990), Waud (1992), Wilkes, Doblin, and Shapiro (1992) do not agree with the benign nature bestowed on these "gifts and honoraria" in the above statement. They contend that pharmaceutical companies would not spend hundreds of millions of dollars per year on "bribes" and advertising if it did not sway physician prescribing practices and allegiances to certain drug companies. A physician will be a walking advertisement in exchange for an object of relatively meager worth (a pocket protector or coffee cup).

Because many physicians have little time to seek out non-industry sources about new drugs, they often rely on manufacturer's advertising and inserts to guide their new drug choices. For this reason, Wilkes et al. (1992) researched accuracy of scientific data in pharmaceutical advertisements. They found that if the physician followed the recommendations made the advertisements analyzed, 44% of the time it would lead to improper prescribing. Fifty-seven percent of the advertisements were found to have little

or no educational value. They concluded that "the public is at risk, because advertisements may be misleading about a drug's appropriateness or they may lack adequate information on potential adverse effects"(Wilkes, et al., 1992, p. 918). Additionally, reliance on pharmaceutical advertising by physicians can result in patients taking medications that are much more costly than an equally effective complementary.

The Cost of Health Care: Are Patients Getting Their Money's Worth?

Health care costs are spiraling upward while statistics show many Americans are getting little or nothing despite the increasing expenditures (Dossey, 1982; National Institutes of Health, 1992). The U.S. gross national product (GNP) for health care costs in 1940 was 4% ($4 billion) of the GNP. By 1992, health care costs had increased to nearly 14% of the GNP ($800 billion) and are rising. In spite of the rising health care expenditures, many Americans have little or no access to health care. It was estimated in 1992 that 37 million Americans have no health insurance while another 22 million have inadequate health care coverage (National Institutes of Health, 1992, p. ix). In terms of its ability to meet the health care needs of Americans to their satisfaction, allopathic medicine is considered very effective in treating infectious diseases and traumatic injuries. However, when caring for the complexities of chronic conditions, allopathic medicine is less than successful. It is believed that the allopathic emphasis on finding single solutions to medical problems, also referred to as "magic bullets," has resulted in this failing. Multifaceted treatment approaches are required for the millions of people suffering from chronic and/or lifestyle-related illnesses (National Institutes of Health, 1992).

In America alone, it is estimated that 33 million people are limited in their daily activities by chronic illnesses such as arthritis, allergies, pain, cardiovascular disease, and depression. One-third of these individuals are debilitated to such an extent that they are unable to work, attend school, or maintain a household. Seventy percent of the current health care budget is spent on these individuals and the numbers are anticipated to grow as

the population grows older (National Institutes of Health, 1992). Traditional allopathic approaches have been ineffectual in the treatment of these individuals. Many in complementary medicine say they can help. Many in allopathic medicine say that complementary methods are, at best, unproven or placebos; at worst, ways to swindle people out of their money (Brecher, 1995; Joyce, 1994).

Profitability and Quality Care:
Are They Mutually Exclusive?

As economics play an increasing role in the provision of health care, physicians and mid-level providers express their frustration regarding the shrinking time available for them to see patients. Managed care plans and insurance companies are using profit margins as indications of what constitutes quality care. Providers are expected to see more patients in a work day resulting in less time per patient (Ganiats, 1995; Kassler, 1993).

With shrinking appointment time, the opportunity to listen to patients and do any kind of an assessment besides the basic "What are your symptoms?" is lost. This kind of work environment also makes it difficult or impossible to do a more holistic or meaningful assessment. A more thorough assessment can uncover reasons that contribute to the development or exacerbation of the presenting problem. Without a reasonable appointment time, providers will be less able to give care that is individualized, preventive and, therefore, cost-effective over the long run (Ganiats, 1995; Kassler, 1993). Recurrence of otitis may decrease considerably by teaching patients and parents how to identify and avoid things which exacerbate this condition and its precursors as well as the pros and cons of different treatment options. By including the patient and their parents in the treatment plan, they become more engaged and empowered to improve the situation. This is one key to effective health care (Edelman & Mandle, 1994).

The patient and her family know the most about the patient's condition and what may worsen or alleviate symptoms. Giving them an opportunity to be heard and have input

on the healing approach to be used will promote individualization of care, adherence with the care plan and appropriate use of health care resources. Good communication between patient and provider can help promote understanding and reduce the chance that the provider will project his or her own anxiety about needing to "do something" for the patient when, in fact, doing nothing may be the best approach. For example, miscommunication has led to physicians prescribing an antibiotic because the physician believed the patient expected it even though it was not warranted (De Melker & Kuyvenhoven, 1991, 1994; Schmidt, 1990). Perceived patient expectations may or may not accurately reflect real patient expectations. The real expectation will only be uncovered by having and taking the time to communicate. Effective, holistic care of an individual can best be accomplished by involving the patient and family in the care planning and implementation (Edelman & Mandle, 1994).

Synopsis of Criticisms

Chapter 2 provides a picture of how allopathic providers would typically handle otitis as well as the rationale behind this approach. The contradiction in research findings makes it impossible to base treatment approaches on research alone. Rather, the medical culture and clinician's experience with treatment failures and successes determines how treatment will proceed. Though allopathic providers indicate that their healing approaches are based on research and fact, it becomes evident that there is more subjectivity in treatment decisions than commonly thought. The lack of good communication between provider and patient is cited as one reason for poorer patient outcomes than would be hoped. Critics also voice concern regarding inappropriate influences, such as pharmaceutical companies and profit margins, weighing too heavily into the equation. The message being sent by the health care recipients indicates dissatisfaction. Only time will tell how or if the allopathic medical community will respond.

CHAPTER 3

COMPLEMENTARY THERAPIES AND OTITIS MEDIA

Because of its widespread prevalence, most parents have a child with a history of one or more ear infections. For the millions of children with recurrent ear infections, a typical treatment scenario involves repeated antibiotic prescriptions and finally, often resulting in surgery. Otitis media is an ailment for which people seek complementary therapies out of desparation or dissatisfaction with the standard allopathic course of treatment. This chapter will focus on widely accepted and/or used remedies by those working within the complementary healing community. By reviewing current literature as well as personal correspondence and communication with complementary practitioners, a determination was made as to which treatments are most prevalent. This is not meant to be an exhaustive review of complementary therapies that could conceiveably be used to treat otitis. Therapies which will be discussed are homeopathy, environmental medicine, botanical medicine, and craniosacral therapy.

The first section of the chapter describes complementary therapies from the point of view of a "believer" of that healing modality. Rather than saying "It is believed to work or act by...," it will be presented "It works by...." The efficacy may not be proven or even proveable at this time. Any scientific research that was found to refute or support the therapies will be presented along with an explanation of the therapy. This gives the reader more of an opportunity to draw personal conclusions.

The last section in this chapter will provide an examination of complementary approaches to research and health care in general. Unlike allopathic medicine,

complementary therapies have had very few studies done which address its efficacy in treating otitis. Therefore, this discussion will not focus on a research-based analysis of complementary treatment of otitis. Because of this lack of research relating to complementary treatments of otitis, a critical analysis at the end of this chapter is focused on complementary medicine in general. Research supporting complementary therapies (very little dealing specifically with otitis) are included under the applicable topics. Additionally, the basis of dissenting opinions regarding complementary medicine will be reviewed. The need for some consistent means to evaluate complementary treatments will be examined along with the resulting development of the Office of Alternative Medicine (OAM). Research methodology will be addressed here, though a more extensive discussion is provided in chapter 4.

Homeopathy

Homeopathy was founded in the late 1700's by a German physician, Samuel Hahnemann. Hahnemann was appalled at the barbarous methods of healing so common for medicine of his time. He set out to find a more humane, effective and rational approach to healing. Homeopathy was born out of years of experiments with hundreds of different substances. The Materia Medica Pura, written by Hahnemann (as in Cook, Jacobs, Ludwig, Milne, & Ullman, 1994; Kaufman, 1971), was based on these "drug proving" experiments. This book is a compilation of symptoms and remedies to guide the homeopath. Three basic principles form the foundation for a homeopathic practice: (1) Like cures like (Law of Similars), (2) The greater the dilution of a remedy, the greater its potency (Law of the Infinitesimal Dose), and (3) Illness is specific to the individual (Cook, Jacobs, Ludwig, Milne, & Ullman, 1994; Kaufman, 1971).

Like Cures Like

A basic premise of homeopathy is the idea that "like cures like." Substances are used to cure diseases that in typical or large doses would produce the very symptoms bothering a person. Hahnemann (as in Kaufman, 1971; Cook, et al., 1994) coined the phrase Law of Similars to describe the phenomenon in which very minute doses of a substance which can cause the symptoms, can actually have a curative effect. This principle was first recognized by Hippocrates hundreds of years B.C. and has since been used as the theoretical basis for the development of vaccines by Salk, Pasteur, and Jenner. This principle is the basis for some common medical practices today. Upon receiving an injection of a dilute disease or symptom-causing component (i.e., a flu vaccine or series of allergy shots), a person's immune system develops antibodies or tolerances specific to that component (Cook, et al., 1994; Harrison, 1989).

Law of the Infinitesimal Dose

Today, homeopathic remedies are normally prepared by diluting the remedy with water or alcohol and succussing (vigorous shaking). The substances are diluted to the point where either no or miniscule amounts of molecules of the original substance exist in the solute. The more dilute the substance, the more potency it possesses. This leads to a discussion of Hahnemann's Law of Infinitesimal Doses, a unique aspect of homeopathy and one which receives the most skepticism (Kleijnen, Knipschild, & ter Riet, 1991; Reilly, McSharry, Taylor, & Aitchison, 1986). References to quantum physics and the emerging field of "energy medicine" are made in an effort to explain how this works (Cook, et al., 1994). The reader is directed back to page seven where a 1988 "dilutional" study is cited. A French research team found that even though they could not find one molecule of the antibody after multiple dilutions, the solution was able to produce a response (Davenas et al., 1988). In another study, nuclear magnetic resonance imaging was performed on homeopathic remedies which showed that at a subatomic level, they had

distinctive characteristics. Placebos were evaluated and not found to demonstrate corresponding potency (Cook, et al., 1994).

Illness is Specific to the Individual

The selection of homeopathic remedies is based on the symptoms of the illness rather than the illness itself. For example, people suffering from a cold may present with a myriad of symptoms--malaise, sneezing, watery eyes, runny nose, cough or fever. Rather than administering one cold remedy, the remedy chosen would be based on the "leading" or prominent symptoms. Allium Cepa, derived from the onion, might be given for someone displaying sneezing, runny nose and watery eyes while Pulsatilla, a common homeopathic remedy, would be given for someone displaying a thick green discharge (Harrison, 1989; Herscu, 1991).

Homeopaths also employ Hering's Law of Cure (Cook, et al., 1994; T. Elgan, personal communication, January 4-7, 1996). This states that healing progresses from the deepest part of the body to the extremities or skin, from the emotional or mental to the physical, and from the upper body parts to the lower body parts. Hering's Law also considers healing to occur in reverse chronology to which illness occurred; in other words, once the presenting symptom or illness is managed by a homeopathic remedy, symptoms of the most recent unresolved malady may manifest in the patient. Homeopaths restore a patient's health layer by layer while being able to track their progress based on symptoms and their resolution. Because each patient has a unique and individual history, their symptoms will often vary for the same underlying condition (Cook, et al., 1994; T. Elgan, personal communication, January 4-7, 1996).

Remedy use is catagorized as being either constitutional or acute depending on the level at which they are prescribed to work. Remedies that are given on a constitutional basis act on a deeper level than those given to alleviate acute symptoms. Constitutional remedies are based on behaviors and personality types in conjunction with presenting

symptoms, referred to as simillimum (totality of symptoms). For example, Pulsatilla can be given as an acute remedy in the treatment of otitis symptoms or as a constitutional remedy based on the "totality of symptoms". For example, a remedy may be prescribed based on such simillimum as a child with a gentle, clingy, fearful nature, regressive behavior, and a history of respiratory related illnesses (Herscu, 1991; Neustaedter, 1991; T. Elgan, personal communication, January 4-7, 1996).

In the treatment of pediatric cases, homeopaths base the choice of constitutional remedies on an extensive interview with the child and her parents, close observation of behaviors and interactions as well as any past experiences the provider has had with that child. There are hundreds of details which direct a homeopathic provider to the appropriate constitutional diagnosis: personality descriptors such as fearless, curious, exuberant, messy, rule breaker, screamer; and physical or behavioral characteristics such as warm blooded, sleeping position preferences, skin tone and condition, amount of facial hair, food cravings and aversions (Geukens, 1988; Herscu, 1991; Neustaedter, 1991). Table 3 gives an example of a line of questioning recommended to help determine a child's constitution or temperament; some questions are intended for infants and some for older children.

Table 3. Suggested Questions to Determine Temperament Attributes

Activity Level
Is her sleep restless or quiet?
Is it easy or difficult to get her dressed because of flailing arms and legs?
Does she fidget about during meals?
Rhythmicity
Is her hunger predictable? Can you predict how long she will play by herself?
Does she awaken at the same time during the night and in the mornings?
Can you predict her habits from day to day?
Approach/Withdrawl
How easily will she take a new food or warm up to a new activity?
If you go to a strange place will she be upset or interested in her surroundings?

Table 3 (continued). Suggested Questions to Determine Temperament Attributes

Approach/Withdrawl (continued)
Will she become excited or reserved when confronted with a family trip to a new place, a school trip, performance in a play?
What is her attitude toward meeting new friends, is it easy for her to make acquaintances or does she hold back and avoid people?
Adaptability
If she reacts negatively to a change, how long does it take her to get used to a new food, babysitter, playgroup?
If another child suggests a game or activity will she readily go along?
Will changes in routine cause upsets or does she adapt easily?
Intensity
Does she protest loudly when she does not like something, or offer little resistance?
When pleased does she tend to be mildly enthusiastic or ecstatic?
Mood
Does she always have an obvious reason for crying, such as hunger, a wet diaper or sleepiness? Or is she often fussy for no apparent reason?
Is she often grumpy and complaining? Or is she usually happy and pleased with herself?
Persistence
If she is reaching for a toy or food that she wants, will she continue to pursue it even if it is out of her grasp?
Do you think of her as stubborn or giving in easily?
Once she learns the fundamentals of a skill that she enjoys, does she practice until she obtains a level of mastery or proceed to another pursuit?
Distractibility
Can you distract her easily with a toy from fussing and crying, or must you take her outside to get her to stop?
When working in school or reading, is it hard for her to remain concentrated? Or is she oblivious to her surroundings when she is focused?
Threshold
Does she seem sensitive to the texture of clothing, heat or cold in the environment, the temperature of her food? Do bright lights or warm weather bother her?
Do slight environmental changes affect her or is she generally comfortable?

From Homeopathic Pediatrics Assessment and Case Management, by R. Neustaedter, 1991, p. 63-67. Copyright 1991 by Randall Neustaedter. Adapted with permission by the author.

With all of these subtle variables, homeopaths recognize the need to evaluate whether or not they identified the correct remedy. Depending on the condition, a follow-up visit or phone call is recommended anywhere from a few hours up to a month after initiating treatment to assess the response. Aggravation or amelioration of symptoms is expected with ingestion of an appropriate remedy; If no change in symptoms is seen, it is

determined not to be the correct remedy. As the homeopath cures the "chief complaint", it is not uncommon for another symptom to develop representing a deeper level of imbalance that requires attention. This idea of layers of symptom presentation is accounted for under Hering's Law of Cure (T. Elgan, personal communication, January 4-7, 1996; Kent, 1994; Harrison, 1989).

History and Progress of Homeopathy in the Western Healing Culture

It is important to consider the history of homeopathy to understand why it has been relegated to the fringes of medical society in America, unlike medical societies in other western cultures. In terms of the history of homeopathy, describe its popularity in the U.S. and Europe in the 1800s and beginning of the 1900s. Several references discussed how, in the mid-1900s, the American Medical Association, with backing from pharmaceutical companies, nearly forced the disappearance of homeopathic practice in the United States (Cook, et al., 1994; Kaufman, 1971; Schmidt, 1990; Winston, 1994a). However, homeopathy continues to be popular in Europe where 39% of French physicians and 20% German physicians prescribe homeopathic remedies for their patients, while 42-45% British and Dutch physicians either refer patients for homeopathic treatments or consider it effective (Winston, 1994a, p. 9).

The differing acceptance between American and European medical communities is evident when evaluating the amount of coverage homeopathy has received in allopathic medical journals. Numerous scientific studies on homeopathy have been conducted and published in the rest of the world. One study published "Is Homeopathy a Placebo Response: Controlled Trial of Homeopathic Potency, with Pollen in Hayfever as Model" (Reilly, McSharry, Taylor, & Aitchison, 1986) poses the oft asked question as to whether the clinical responses to homeopathic drugs are placebo induced. Another study tested the reproducibility of trials done showing that homeopathy does more than a placebo (Reilly, et

al., 1994). Kleijnen , Knipschild, and ter Riet (1991) used a criteria based meta-analysis of 107 controlled trials assessing whether there is evidence of efficacy of homeopathy based on human studies. These studies appeared in 96 published reports covering two and a half decades. Though there was positive evidence of homeopathy's efficacy, a call for further evaluations was made as many of the studies were of low methodological quality. On the other hand, de Lange de Klerk et al. (1994) concluded that homeopathy "added little" in terms of symptom relief among children with recurrent upper respiratory tract infections.

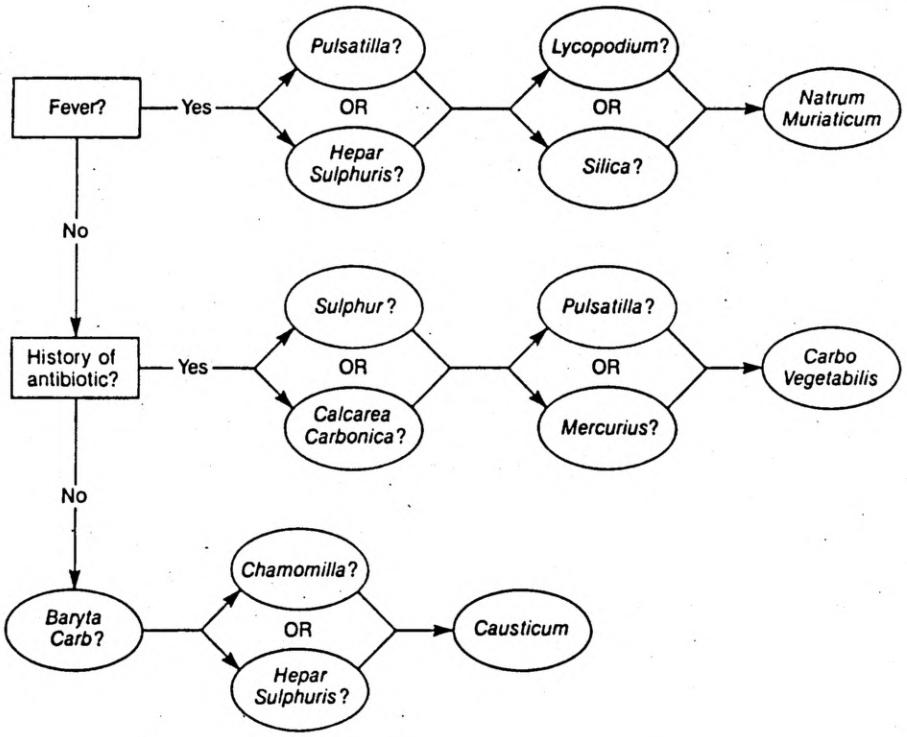
The first time a medical journal in the United States accepted a clinical study which used homeopathic medicines was in 1994. The May 9th issue of Pediatrics published a double-blind clinical trial of homeopathy in the treatment of acute childhood diarrhea (Jacobs, Jimenez, Gloyd, Gale, & Crothers, 1994). The lead author of the diarrhea study published in Pediatrics, Jennifer Jacobs, is a physician and clinical faculty at the University of Washington. She is currently working on a pediatric trial involving otitis media and homeopathic remedies (Guzzetta & Jones, 1995). Her attitude is reported as "If homeopathy is legitimate, then we should be able to document this in a scientific way" (in Winston, 1994b, pp 7). This does not mean the exact mechanisms will be understood, much as mechanisms for allopathic treatment are not understood; proof of efficacy is what is being sought at this point in time (Winston, 1994b).

Homeopathy In Relation to Otitis

Pediatric otitis is a common problem brought to homeopaths as parents typically are trying to get out of the vicious cycle of ear infection--antibiotic--ear infection--antibiotic (Marti, 1995; Neustaedter, 1991; Schmidt, 1990). In the case where an antibiotic is prescribed for otitis, the pain is expected to resolve in approximately twelve hours and the redness of the tympanic membrane in ten days. If the redness persists at the ten-day recheck, a longer course or different kind of antibiotic is typically prescribed.

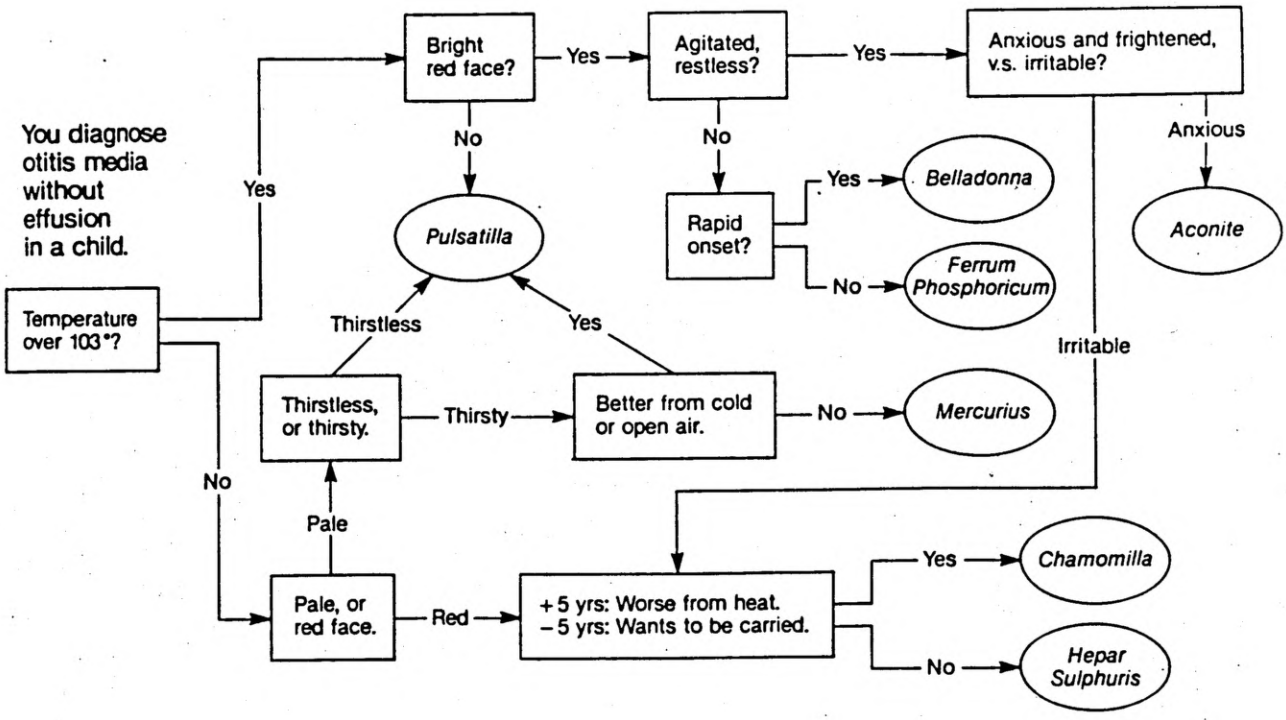
Homeopathic treatment of otitis will have a different course under homeopathic care. An experienced homeopath should be aware of the expected course of an acute illness such as otitis and how the course of an illness under homeopathic treatment will differ from that of allopathic treatment. The pain should subside immediately but may not go away completely for two to three days after treatment. The tympanic membrane may remain pink for weeks afterward but is not considered to be an indication of a problem unless the child has persistent symptoms (Neustaedter, 1991). One example of how a homeopath would approach an otitis case is demonstrated by Figures 1 and 2. Figure 1 demonstrates the approach for acute otitis while Figure 2 is for otitis media with effusion.

Figure 1. Homeopathic treatment algorithm for acute otitis media in a child.



From graphics by Stephen A. Messer as in Childhood Ear Infections: What Every Parent and Physician Should Know About Prevention, Home Care and Alternative Treatment by M.A. Schmidt, 1990, p 208. Copyright 1986 by S.A.Messer. Reprinted with permission of the author.

Figure 2. Homeopathic treatment algorithm for otitis media without effusion in a child.



From graphics by Stephen A. Messer as in Childhood Ear Infections: What Every Parent and Physician Should Know About Prevention, Home Care and Alternative Treatment by M.A. Schmidt, 1990, p 209. Copyright 1986 by S.A. Messer. Reprinted with permission of the author.

Based on the individual's otitis symptomatology, a homeopathic treatment is selected to stimulate the body's healing mechanism. Again, the acute presentation of otitis will be managed differently than a case where there is a history of frequent infections but no problems at the time of visit. In the situation where a patient is in the middle of constitutional care and an acute illness arises, the homeopath may choose to refocus treatment on the acute symptoms, resuming constitutional care upon resolution of the acute illness (Schmidt, 1990; T. Elgan, personal communication, January 4-7, 1996). No scientific studies were found on the treatment of otitis with homeopathy so the results of Jacob's study may provide some measureable results.

Access to Homeopathic Remedies

The practice of homeopathy is not restricted: The public has easy access to most homeopathic remedies in health food stores and mail order catalogs. The rationale for open access is based on the idea that no harm can be done by incorrect prescribing as the remedies are so dilute. They will not harm if given incorrectly but can help if given correctly. Some homeopaths dispute this, saying that imbalances can result from inappropriate remedy use. The Food and Drug Administration has removed some remedies from public access based on their concerns that harm could result even from infinitesimal dosing (Cook, et al., 1994; Harrison, 1989; T. Elgan, personal communication, January 4-7, 1996). Hundreds of "how to" books and pamphlets are available in bookstores and catalogs which are directed towards a range of homeopathic experience: novice to seasoned practitioner (See Appendix C).

The future of homeopathy seems strong but the exact role it will assume in American health care in years to come is uncertain. Will it continue to remain on the fringe of health care practices in the United States, its popularity fluctuant as in the past, or will it become an integral part of mainstream practices?

Environmental Medicine

Environmental medicine is based on the belief that dietary and environmental allergens play a key role in an individual's health and illness. Household chemicals, biological contaminants (i.e., molds, bacteria from desquamated skin, and exhalants), medications, and certain foods to which an individual is sensitive can cause a myriad of reactions or physical and mental ailments (Seltzer, 1994a; Wilkinson & Mandell, 1994).

Elements of environmental medicine were conceived in the 1940's based on the work of Theron Randolph, a Chicago-based allergist and medical school professor. He promoted the belief that an individual's sensitivity to commonly eaten foods could result in

a wide range of ailments from fatigue and arthritis to headache, depression and gastrointestinal problems. In the last two to three decades, environmental medicine has broadened its scope to include other factors such as smog, cigarette smoke, commonly used pesticides or household chemicals, and toxic chemicals emitted from building materials used in homes and offices (Wilkinson & Mandell, 1994).

Today, over six hundred physicians have joined the American Academy of Environmental Medicine (AAEM). The members of AAEM recognize that a genetic predisposition to allergies exists often resulting in an increased incidence of allergic sensitivities in subsequent generations. Other factors which medical environmentalists also believe contribute to illness--specifically otitis media--are diet, frequent use of antibiotics, chemical exposure and environmental pollutants (Seltzer, 1994a, 1994b; Schmidt, 1990; Wilkinson & Mandell, 1994).

Nutrition and Allergies

The correlation between nutrition and ear infection is widely discussed in complementary healing literature. Common food allergies are believed to promote fluid build-up in the middle ear as well as suppress the immune system. Supplements such as vitamin C, bioflavinoids, betacarotene, zinc picolinate, and evening primrose oil are cited as helping prevent otitis and/or promoting a healthy immune system (Marti, 1995; Murray; 1990, 1994; Schmidt, 1990).

Allopathic researchers have found some similar finding although many of the supplements have not been studied nor has the application been specifically for otitis. Two studies found ascorbic acid supplementation to have a positive effect on the incidence and severity of upper respiratory tract infections (Baird, Hughes, Wilson, Davies, & Howard, 1979; Peters, Goetzsche, Grobbelaar, & Noakes, 1993). Two other studies considered the effects of vitamin A supplementation on diarrhea, acute lower respiratory tract infection and severe measles. In all three cases, the morbidity and mortality were positively impacted by

vitamin A supplementation, whether or not they had a vitamin A deficiency (Hussey & Klein, 1990; Barreto et al., 1994).

Nsouli et al. (1994) looked specifically at the relationship between food allergies and serous otitis media in one hundred four children with recurrent serous otitis. The children were from one and a half to nine years old. Of the study population, 78% were found to have food hypersensitivity, 86% showed improvement with elimination of the offending food(s) and 94% had a recurrence of serous otitis when they were rechallenged with the offending food(s). Cow's milk, wheat, egg white, peanuts, soy, corn, and orange accounted for over 90% of the allergy-producing foods (Nsouli et al., 1994). Coincidentally, this is the same list of "offending" foods that the complementary literature lists (Marti, 1995; Murray & Pizzorno, 1990; Murray, 1994; Schmidt, 1990).

Schmidt (1990, 1994) sides with environmental medicine as he makes a case for the potentially harmful effects of antibiotics. Citing dozens of references from allopathic medical journals, he describes how antibiotics destroy important intestinal bacteria thereby increasing susceptibility to intestinal infections such as giardia lambia or clostridium dificile. Additionally, antibiotics can inhibit the function of the immune system by preventing neutrophil chemotaxis (chemical signals that tell the white blood cell where to go), depressing the natural killer cell activity, and reducing the production of antibodies which results in a thousand-fold increase in some intestinal bacteria (due to unchecked overgrowth) (Schmidt, 1990, 1994; Weil, 1995). Complementary practitioners recommend taking the steps discussed in this chapter to promote health thereby decreasing the need for antibiotic use in the first place. If antibiotics are used, a bifidus or lactobacillus acidophilus supplement is recommended during antibiotic treatment and for one month after completion of the antibiotic to replace the "friendly bacteria" (Chaitow, 1994; Schmidt, 1990).

Building-Related Illness

Building-related health problems result from airborne substances which may cause or exacerbate allergies, irritate mucous membranes, interfere with immune system functioning and provide direct exposure to pathogens. Building related illness can be divided into two groups: some have a specific symptomatology and an identifiable etiology, others have a wide range of symptoms and usually an unclear etiology. Examples of specific etiologic agents causing the former would include Mycobacterium tuberculosis, Legionella species, and respiratory viruses. "Sick building syndrome" (SBS) is the phrase given to the latter group (Schmidt, 1990; Seltzer, 1994b; Weeks, Levy & Wagner, 1991).

"Sick Building Syndrome" has arisen as buildings have been made increasingly air tight to conserve heating and cooling expenditures. This results in the build up of potentially toxic air contaminants. Much of the data obtained regarding SBS has been gathered from occupational-exposure studies (Seltzer, 1994a; 1994b; Weeks, Levy & Wagner, 1991). Contaminants are made more hazardous because of continuous exposure which explains the focus on worksites (exposure for 40+ hours per week). Since the average adult and child spend less than one to two hours outside per day, home-related pollutants are also a major concern. Building materials emit indoor air contaminants such as formaldehyde; heating sources emit sulfur dioxide, nitrogen dioxide and respirable contaminants; paints, wood preservatives, dry cleaning, air fresheners and plastics emit volatile organic compounds (Schmidt, 1990; Seltzer, 1994b; Weeks, Levy & Wagner, 1991). Table 4 which begins on the following page, gives examples of indoor pollutants and their biological effects. A more complete listing is provided in the appendices (Appendix D).

Table 4. Indoor Pollutants and Toxins.

Substance	Biological Effects
GASES	
Ozone (O3) Unstable, poisonous gas with penetrating odor: Generated by photocopiers; exposure of polluted air to UV radiation; appliances with brush-type motors.	Decays rapidly into oxygen, but even small amounts are serious irritants to eyes, nose, throat, and respiratory tract.
COMBUSTION GASES	
Carbon Monoxide (CO) Colorless, odorless, poisonous gas from incomplete combustion in gas flames, wood, coal, and tobacco smoke, vehicle exhaust.	Reduces absorption levels of oxygen, causing headaches, dizzyness, nausea, loss of appetite. Those with heart, lung, and circulation disorders are most susceptible.
Carbon Dioxide (CO2) Colorless, odorless gas. A combustion product of bottled gas heaters. It is responsible for stale and stuffy air in poorly ventilated rooms.	Continuous exposure may affect the central nervous system and slow down reactions.
VOLATILE ORGANIC COMPOUNDS (VOCs)	
Formaldehyde (HCHO) Binder and preservative with a pungent odor. At room temperature, toxic vapors are released that contaminate the air. Widely used as a bonding agent and adhesive in timber and plastic products; a preservative in paper products, carpeting, furnishings; a finish for clothing and bed linen. Occurs in combustion of byproducts from cooking and heating appliances, as well as in tobacco smoke. Urea-formaldehyde foam insulation (UFFI) foam used prior to mid 1970s is particularly hazardous.	Potent irritant to skin, eyes, nose, and throat with accompanying headache, dizzyness, nausea, and breathing difficulties. It may cause nosebleeds. Suspected carcinogen. Chronic exposure to UFFI vapors causes depression and triggers chemical sensitivities.
PARTICLES	
Metals Trace elements from lead, cadmium, mercury, aluminum, and copper can be absorbed and accumulate to toxic levels in the body. Lead is present in old water pipes, exhaust fumes; lead and cadmium in paint; mercury in tinned tuna; aluminum is absorbed into food from cookware.	Lead and cadmium can damage brain and nerve tissues. Cadmium can also affect vision. Toxic levels of metals in the body give rise to headaches and breathing troubles.

From The Natural House Book: Creating a Healthy, Harmonious, and Ecologically-Sound Home Environment by D. Pearson, 1989, p. 51. Copyright 1989 by Simon and Schuster. Reprinted with permission of the author.

Agents act to cause building-related illness by four mechanisms: (1) immunologic-i.e., organic chemicals; (2) infectious-i.e., respiratory viruses; (3) toxic-i.e., lead; and (4)

irritant-i.e., tobacco. The exact mechanism by which these substances cause illness is known in some cases and unknown in others (Seltzer, 1994b).

Two exposures which studies have shown pertain specifically to childhood ear infections are tobacco and day care attendance. Environmental tobacco smoke (ETS), or secondary smoke, has been shown to increase the incidence of otitis media with effusion (OME). In one study, Etzel, Pattishall, Haley, Fletcher and Henderson (1992) objectified the measurement of smoke exposure by using serum cotinine levels rather than rely on the more subjective parent's self-reporting. Cotinine is a major metabolite of nicotine and specific to tobacco exposure. Children with high cotinine levels were found to have a longer duration of OME episodes (28 days compared to 19 days) and higher rate of new episodes (38% higher) when compared to children with low or undetectable cotinine levels. Kitchens (1995) did a prospective study on 350 children to evaluate the effect of ETS on the incidence of otitis: 175 participants had a history of recurrent otitis requiring tympanostomy tubes (case group) and 175 were age-matched (control group). He found a significant correlation between the exposure of secondary smoke and incidence of otitis. Possible mechanisms which could explain this association include hypersecretion of mucus and diminished ciliary function in the respiratory tract and decreased phagocytic defenses due to smoke exposure (Etzel, et al., 1992).

Day care exposure fits into the catagory of an infectious environmental mechanism or agent contributing to illness. Studies and literature reviews have demonstrated an increased incidence of upper respiratory tract infections, ear infections, diarrhia or gastrointestinal infections, and *Haemophilus influenzae* Type B in day care participants when compared to home or group care. Home care is defined as a child cared for at home with siblings while group care is two to six children and day care is seven or more (Schwartz et al., 1994; Wald, Dashefsky, Byers, Guerra, & Taylor, 1988). A review by Schwartz et al. (1994) found that otitis and upper respiratory tract infections were the two

most prevalent conditions found in the day care population. Wald, et al. (1988) compared the frequency, nature and severity of infections in children in day care, group care, and home care over the course of twelve to eighteen months. The rate of hospitalization for myringotomy and tube placement in day care children was 21% compared to 3% in home care children. Similarly, group and day care children were more likely to experience at least six respiratory infections, more than sixty days of illness and more than four severe illnesses than their home care counterparts.

Environmental Medicine In Relation to Otitis

An environmental medicine approach to treating otitis involves a thorough assessment of the offending agents and their removal (to the extent that it is possible). One example is the eradication of indoor tobacco smoke, although compliance on the part of the smoker can be an issue. Also, elimination diets are a non-invasive method frequently used to assess for food allergies. The six or seven most common "offending foods" are completely eliminated from the diet and slowly added back one at a time. At each step, symptoms are monitored closely in order to determine which food(s) induce symptoms in that child.

Interventions for a child attending day care who has recurrent otitis or upper respiratory tract infections would focus on modifications at the day care that would decrease the spread of infectious organisms. Examples include enforcing stay-at-home policies for sick children, and reinforcing the importance of good hand washing and use and disposal of tissue paper (Schmidt, 1990; Schwartz et al., 1994; Wilkinson & Mandell, 1994).

Botanicals

Botanical or herbal medicine is considered to be the most ancient and widespread healing modality known. Close to three-quarters of drugs currently patented are based on

knowledge derived from plant substances. A quarter of all prescription drugs are still derived from shrubs, trees and herbs (Hoffman, 1994; Schmidt, 1990).

Allopathic medicine is believed to have steered away from the use of botanicals for a number of reasons: economics, availability, and consistency. Herbs cannot be patented and without a patent, the exclusive rights to an herbal remedy cannot be owned. The costs associated with the testing and promoting a drug are extremely high therefore without any way to recoup those costs via patents, motivation for developing a line of botanicals is low (Hoffman, 1994; Marwick, 1995). Additionally, some herbal drugs are derived from plants found only in politically or environmentally unstable places (i.e.,the Amazonian rain forest) making access difficult. Lastly, the potency of plants varies which requires more detail in preparation in order to assure consistency in dosing. Synthetic drugs are considered more dependable and less costly to manufacture (Hoffman, 1994). As there currently is no regulation of herbal remedies, a strong criticism of the botanical industry is that it does not provide for consistent levels of the active ingredients ("Herbal Roulette," 1995; Marwick, 1995).

Nonetheless, botanicals continue to be popular worldwide--particularly in Chinese medicine and Ayervedic medicine (more commonly practiced in India), and are gaining popularity in America ("Herbal Roulette," 1995; Marwick, 1995). Herbal remedies come in many different forms, similar to their pharmaceutical counterparts. Whole herbs can be grown or purchased (in a dried form) and eaten or made into a tea. Some people grow feverfew and eat one or two leaves when they develop headaches (Murray, 1994). Capsules and tablets are common forms used to administer some of the more bitter or astrigent tasting herbs (i.e. goldenseal root). Extracts and tinctures are an advantageous form in that they allow for high concentrations in a relatively small volume. They are typically alcohol-based which acts as a preservative (thereby increasing the shelf life) and a solvent for the non-water-soluble compounds in the plant. Essential oils are either distilled

or, occasionally, expressed. These can be used internally or topically although care should be taken with some due to their concentration. Those that can irritate are diluted in fatty oils or water before using. Salves, balms, and ointments are the form used to treat skin problems or wounds. Common ingredients include aloe, calendula (from marigolds), chamomile or St. John's Wort (Blumenthal et al., 1994; Hoffman, 1994; Murray, 1994).

One method of catagorizing botanical remedies is based on which types of problems are alleviated through use of the herb. For example, adaptogenic herbs help the body cope with stress by increasing resistance and resilience through support of the adrenal gland. Anthelminitics destroy or expel intestinal worms. Antimicrobials facilitate the body's destruction of or resistance to pathogenic organisms either by acting directly against the invading organism or by boosting the body's immune system (Hoffman, 1994; Murray, 1994; Murray & Pizzorno, 1990; Schmidt, 1990). The herbal actions sought for the treatment of otitis media are antimicrobial, anti-inflammatory, and alterative, which gradually restore proper functioning of the body and improve vitality. This section will include a discussion of the role of polysaccharides in botanical medicine, use of three specific botanicals (Echinacea, Hydrastis, and Astralgus), ear drops, and tea--all in the context of treatment for otitis.

The Role of Polysaccharides in Botanical Medicine

Polysaccharides are essential constituents of all living organisms. In the last decade, they have come to be recognized as an important class of bioactive products derived from plants. A wide range of polysaccharides have been observed as producing one or more of the following effects *in vivo* and *vitro* studies: antitumor, immunological, anti-inflammatory, anticoagulant, hypoglycemic and antiviral activities (Franz, 1989; Srivastava & Kulshreshtha, 1989; Wagner & Proksch, 1985). They are believed to be the "active ingredients" in some botanical medicines that result in the beneficial effects for children with otitis and upper respiratory tract infections (B. Burch, Eclectic Institute,

personal communication, August 24, 1995; L. Marshall, Eclectic Institute, personal communication, October 18,1995). Echinecea and astralagus both have immunostimulating polysaccharides (Franz, 1989; Srivastava & Kulshreshtha, 1989; Wagner & Proksch, 1985).

Echinecea

Echinacea has been recognized for decades by Native American tribes as having multiple therapeutic benefits, particularly in fighting infections. Today, its importance in botanical medicine appears to continue as it is recommended by many complementary references as being a key support for the immune system. It is listed as having anti-viral, anti-bacterial and anti-fungal activity (Marti, 1995; Murray, 1994; Murray & Pizzorno, 1990; Schmidt, 1990; Wacker & Hilbig, 1978).

There are three species of Echinacea: *E. angustifolia, E. purpurea*, and *E. pallida* roots. For the purpose of simplicity, all three will be referred to as Echinacea in this discussion although it would be important to differentiate if one were using them therapeutically. The activity of constituents which exert a therapeutic effect from the Echinacea plant are dependent upon several factors including the part of the plant used, time of harvest, conditions and length of storage, and the form and method of administration (Bauer & Wagner, 1990a, 1990b; Stimpel, Proksch, Wagner, & Lohman-Matthes, 1984).

Numerous studies have been published in scientific plant or pharmacology journals regarding the effects of Echinacea. The root extract has been found to improve phagocytosis of granulocytes in humans as well as activating macrophages (Bauer & Wagner, 1990a, 1990b; Stimpel, et al., 1984). Chicoric acid, a constituent found in Echinacea, was found to be directly virostatic and immunostimulating (Bauer & Wagner, 1990a, 1990b; Cheminat, Zawatzky, Becker, & Brouillard, 1988). Additionally, it has been found to exert an anti-inflammatory effect with both systemic and local administration as well as having an accelerating effect on wound healing (Tubaro, Tragni, Del Negro,

Galli, & Della Logia, 1987; Wagner & Proksch, 1985). A fact sheet and compilation of research sent by Eclectic Institute (B.Burch, personal communication, August 24, 1995) cites a study published in a phytology journal in which 2.3% of patients reported side-effects. Wagner and Proksch (1985) found no cellular toxicity in their or other studies reviewed. They did find marked decreased pharmacological activity of the Echinacea polysaccharides when daily dosing exceeded a defined level.

Hydrastis

Hydrastis canadensis (goldenseal) shares a history and popularity similar to Echinecea although research supporting its anti-infective characteristics is not as abundant. Native Americans used it for gastrointestinal and uterine problems in addition to its antiseptic effects (B. Burch, Eclectic Institute, personal communication, August 24, 1995). Although several studies are available that describe all the gastrointestinal and uterine mechanisms of action, only those pertaining to its use with otitis media will be discussed in this section.

Berberine, a constituent in Hydrastis, has been shown *in vitro* to have strong antibacterial effects on many of the pathogens associated with otitis: Staphylococcus aureus, Streptococcus pyogenes (two common bacteria found in otitis exudate cultures) in addition to several other microorganisms including Mycobacterium tuberculosis (Amin, Subbaiah, & Abbasi, 1969). It has also been found to block the adhesion of Escherichia coli and Streptococcus pyogenes to host cells which is one mechanism that facilitates its access into the host's cells (Sun, Abraham, & Beachey, 1988; Sun, Courtney, & Beachey, 1988).

Astralagus

Astragalus membranaceus is a popular Chinese herb known for its energizing and immune-stimulating effects. There are different species of Astragalus membranaceus: A.

mongholicus and A. gummifera. Both species contain immune-stimulating polysaccharides (Franz, 1989). Although Astralagus mongholicus tends to be referred to more, often there is no distinction made between the two. Astragalus membranaceus will be used in this discussion to cover both kinds. Again, this discussion will focus on those mechanisms of action which pertain to otitis treatment or prevention.

Astralagus has been shown to be highly effective in restoring immune function as demonstrated in cancer patients with advanced disease and test animals given chemotherapeutic drugs. Researchers at six leading cancer research centers found that Astralagus augmented white blood cells that combat disease and removed damaged white blood cells that make the body more vulnerable to disease (Dharmananda, 1988). Wagner and Proksch explain the mechanisms by which astralagus exerts its immune-stimulating effects. Glucoarabinan, a constituent of astralagus, was found to increase plasma cell counts as well as stimulate phagocytosis and T lymphocytes (1985). A Chinese study found that it triggered or accelerated the hemopoietic cells (those that form blood cells) to move from a resting state into a manufacturing state. This reinforces the commonly held belief in Chinese medicine that it reinforces vital energy and promotes hemopoiesis (Rou & Renfu, 1983).

Echinecea, hydrastis, and astralagus can be given alone or in combination with these and other botanicals depending on the case and practitioner. They can be used for acute infections, as an adjunct to antibiotic therapy, or for prophyllaxis in the case of recurrent acute and serous otitis (B. Burch, Eclectic Institute, personal communication, August 24, 1995; Schmidt, 1990).

Ear Drops and Tea

Ear drops are not used to cure an ear infection but they do provide relief of pain associated with them. Instillation of warmed mullein oil in the ear canal is a pain reliever referred to repeatedly in complementary healing books (Marti, 1995; Murray & Pizzorno,

1990; Schmidt, 1990). Other effective ear drops include "The Three Yellows" (containing cold herbs, Coptis, Phellodendron, and Scutellaria), "The Four Yellows" (adding Astralgus, which eliminates pus, to "The Three Yellows"), Plantago major or Pennywort tincture (Schmidt, 1990).

Ingredients for an herbal tea that is recommended for children with otitis includes water, honey, a few drops of brandy, fresh ground ginger root, cinnamon or cayenne. This can help to decrease mucous congestion and build energy in a weakened or sick child (Schmidt, 1990). Schmidt (1990) also describes the use of Chinese botanical medicine as a very effective and long proven therapy for otitis media. Because of its complexity, a discussion of this type of treatment is beyond the scope of this paper.

Botanical medicine has a surprising amount of research behind it. However, much of the research is *In vitro* which has limited applicability when applying it to a particular disease state such as otitis. The literature indicates that botanicals have a place in the treatment of infectious processes such as otitis. It would be invaluable to have some controlled studies of botanical treatment of otitis.

Craniosacral Therapy

Craniosacral therapy focuses on assessment and manipulation of the bones of the skull, vertebral column, sacrum, coccyx, and pelvis. It was originally developed in the 1970s by an osteopathic physician, John Upledger. In fact there are many similarities between osteopathy and craniosacral therapy. Craniosacral therapy is based upon an assessment of the rhythmical motion created by the movement of the cerebral spinal fluid as it flows around the brain and spinal cord. A cranial therapist uses a very light touch to palpate and locate restrictions in the cranium and spine focusing on alleviation of any obstacles movement of the cerebrospinal fluid. Restrictions can be a result of injury,

inflexibility of spinal or cranial joints or dysfunction in other body systems (National Institutes of Health, 1992; Norett, Shields, Unger & Upledger, 1994).

Different Craniosacral Therapies and Mechanisms of Action

There are three different approaches to craniosacral therapy: sutural, meningeal and reflex. The sutural approach was the original one developed by an osteopathic physician at the turn of the century. This approach focuses on manipulation of the sutures of the skull in order to ease pressure within the cranium and increase mobility of the cranial bones. The meningeal approach was developed in the 1970's by a multidisciplinary research team of anatomists, physiologists, biophysicists and bioengineers who worked on trying to determine the scientific basis of the craniosacral system. Their work led to an approach that focuses on manipulation of the meninges, the three protective layers that surround the brain and spinal column. As with the sutural approach, tension or restriction in the meninges is believed to create a disturbance in the craniosacral system. These restrictions are assessed in a manner similar to the sutural approach but released through gentle "tractioning and elongating" of the meningeal membranes. The third therapy, known as the reflex approach, is much the same as the first two except that manipulation focuses on stimulating nerve endings in the scalp or between cranial sutures. This triggers the nervous system to turn off stress signals in the brain resulting in a release of cranial restrictions. One system, Sacro-Occipital Technique, combines all three approaches into one therapeutic technique (Norett, Shields, Unger & Upledger, 1994).

Trauma to the head or spine can result in biomechanical problems, such as compression of the nerves and blood vessels that pass in and out of the cranium and spine, thus affecting the central nervous system. Conditions which respond well to craniosacral therapy include chronic pain, headache, temporomandibular joint syndrome, dyslexia and epilepsy. By virture of their immature anatomic development, children are considered the

most vulnerable to injury as well as being the most responsive to craniosacral therapy. "At this stage, the cranial bones are primarily cartilage and the membranes are growing and changing very rapidly, so they are very responsive to the gentle corrections of the therapist's fingers" (Norett, Shields, Unger & Upledger, 1994, p. 152). Craniotherapy has proved effective in treatment of common conditions affecting infants such as otitis, congestion, vomiting, and hyperactivity. Schmidt describes the relationship between the nervous system and immune system as a partial explanation of how the incidence of otitis is affected by biomechanical forces:

> As we begin to understand the links between the nervous system and the immune system, it is clear that an ongoing feedback exists. Cells of the immune system relay messages to the nervous system by way of the chemicals they secrete, while the nervous system relays messages to the immune system by way of neurotransmitters. Interruption of the flow of information results in change in function....Nerve fibers supply information to the parts of the body with which they connect. When nerve conduction is interfered with, the structures that the nerves supply are damaged as well.(1990, p.83-84)

The efficacy of craniosacral therapy is anecdotal but well documented in many case studies. Articles in osteopathic texts and journals describe the movement of the cranium although whether or not the cranial bones are movable after the mid-thirties remains a hotly disputed point (Norett, et al., 1994). Case studies include stories of successful treatment of unretractable headaches, restoration of olifactory and auditory loss that had resulted from trauma, and resolution of chronic pain at the site of two-year-old mastectomy scars (Norett, et al., 1994). One osteopath had success in treating recurrent middle ear infections by focusing his treatments on the sacral part of the craniosacral system He found that in children with recurring otitis, the sacrum was the area exhibiting restriction, probably from trauma suffered during birth:

> When the sacrum is restricted, the whole primary respiratory mechanism is impaired. Along with this goes a pattern of restricted breathing, and it is the force of the breath--the rhythmic pressure changes in the chest--that pumps the lymphatic circulation. With inadequate lymphatic circulation there is poor fluid drainage from the head and neck. Stagnant fluid builds up in the middle ear, providing an ideal breeding ground for bacteria. You can wipe out the bacteria all you want with

> antibiotics, but if you don't correct the underlying problem of fluid stagnation, they're just going to come back. (Fulford as cited in Weil, 1995, p. 35)

Craniosacral therapy has been found to exert its most powerful effects on the function of the immune system, central nervous system, endocrine system and visceral organs via the autonomic nervous system. The treatments require a minimum of thirty minutes of uninterrupted therapy but often take longer than an hour. A wide variety of health care providers, including physicians, dentists, and nurses, have sought postgraduate training at the Upledger Institute, a craniosacral school established in the United States. The founder, John Upledger, an osteopathic physician, has published controlled studies in osteopathic journals validating the efficacy of craniosacral therapy in school-age children with various brain dysfunctions (such as learning diabilities and behavioral or motor problems) (National Institutes of Health, 1992).

Touch and Healing

Craniosacral therapy is one of many healing modalities in the genre of manual healing methods. The power of touch for mental and physical well-being has been well established by renowned social scientists such as Ashley Montagu (Touching: the Significance of the Skin, 1986). Many techniques have been derived from practices developed since the beginning of medicine but are no longer being taught or advocated in medical schools. "The hands once were the physician's greatest and most important diagnostic and therapeutic tool. Today, the medical and health practitioner retreats further and further from physical contact with the patient, ever more distanced by banks of diagnostic equipment, legal constraints, and time factors" (National Institutes of Health, 1992, p. 113).

There is much in the way of individualization and art on the part of the therapist administering manual healing methods. Insofar as this is true, it will be a challenge to be able to evaluate the efficacy of manual healing methods such as craniosacral therapy. Once

again, the need is evident for different tools and methods as the traditional quantitative approach is inadequate for evaluating these healing modalities (National Institutes of Health, 1992).

Analysis of Complementary Approaches

Discussions about complementary medicine are often sharply divided: Proponents say it is safer and at least as effective as allopathic medicine; opponents believe so little is known about it that it should not be considered either safe or effective. Both can be considered correct depending on who or what source is consulted. This section of chapter 3 examines this debate.

An examination will be made of complementary approaches to research and health care in general. A critical analysis of complementary medicine is presented, including the lack of quality controls or proof of efficacy. The issue of research and appropriate methodology was found repeatedly in the literature by both opponents and proponents of complementary medicine. Though addressed briefly here, chapter 4 examines research and scientific methodology more closely.

Dissenting Opinions

It is informative to look at who is for or against complementary medicine and attempt to understand why a particular view is held. For example, well-educated, middle-class people (often those in health care occupations) are typical consumers of complementary therapies. According to the subjects in two studies, consumers believed that complementary medicine had fewer side effects and was more effective than allopathic medicine, especially for chronic conditions (Eisenberg et al., 1993; Spigelblatt, Laine-Ammara, Pless, & Guyver, 1994).

Berman et al. (1995) surveyed 295 family physicians in the Chesapeake region, District of Columbia, and part of Virginia and Maryland to ascertain what their attitudes

were toward complementary medicine. They found that physicians most frequently referred patients to complementary therapies in which they claimed to have received training. They concluded "that experience and training in a therapy, and not necessarily scientific evidence, play a major role in the responding physicians' acceptance of a therapy" (Berman et al., 1995, p. 365). The authors cited studies which found that over half the physician respondents had referred patients for complementary therapies.

Witch Hunts and Miracle Cures

The National Council Against Health Fraud (NCAHF) is a volunteer, non-profit watchdog of complementary healing and healers. Their newsletters report cases of questionable ethics, efficacy, side-effects and possible deaths attributed to complementary therapies and practitioners. Initially, it appeared to be a credible critic of complementary medicine. Upon closer scrutiny, it appears to be an example of the irrational, emotion-laden arguments that some members of the medical community use when analyzing complementary medicine. The NCAHF most frequently quotes local newspapers, complementary therapy skeptics, and professional medical journals as well as providing pertinent legislative updates. Some of the more sensational sources used (i.e., newspaper articles) and language used throughout the newsletter (i.e. "quackery," "full of hot air!," "weasel words") indicate a significantly biased, if not strident, view of complementary medicine. An example of this can be seen in a discussion of Therapeutic Touch, a healing technique co-developed by a nurse educator, Dolores Kreiger. NCAHF describe Therapeutic Touch as being a derivation of wicca, an ancient fertility religion that "witches" and "warlocks" of old practiced in the nude. The article equates wicca with Therapeutic Touch and goes on to say "...nursing's infatuation with the female-dominated wicca reflects a deep-seated resentment of males stemming from traditional female RN subservience to male MDs" ("Therapeutic Touch," 1995, p. 3). Instead of looking at these therapies logically, attempting to rationally evaluate their effectiveness, many of their

articles contain emotionally-laden terms which stray from rational arguement or thought, a criticism they make of complementary medicine. On the other hand, some of NCAHF information has professional sourcing, less biased wording and is worth serious consideration. One such article is their position paper on over-the-counter herbal remedies.

Herbal remedies account for over $1.5 billion in sales annually. The vendors of herbal remedies portray these products as safe and natural. However, many herbs are sources of potent drugs. Members of the herbal industry and NCAHF agree that more information should be provided to consumers of herbal remedies (Marwick, 1995; "NCAHF Position Paper", 1995).

> Consumers are being denied the most fundamental information and assurances of quality. By law, drug labels must provide essential information, but herbal remedies are being marketed as 'dietary supplements' with little of the type of information needed to enable people to use these remedies properly. The herbal industry blames current regulatory policies for some of these problems. They say that FDA regulations prevent them from supplying drug information because their products are regulated as dietary supplements. Herbal remedies cannot be profitably marketed if they have to meet the full requirements of drug approval...The FDA is bound by the law to regulate products that make medical claims as drugs. ("NCAHF Position Paper", 1995, p. 2)

The NCAHF made specific recommendations for legislators, regulators, herbal manufacturers, and medical providers. Essentially, they urged that adaptations to the current regulatory process be made rather than keeping herbal remedies under-regulated and its users uninformed ("NCAHF Position Paper", 1995).

Many of these same concerns were mirrored in a report on herbal remedies by Consumer Reports. As marketing and regulations stand currently, there is no way to know how much, if any, of the active ingredients end up in the remedy bought, what else might be in the pills, and whether the next bottle of the same remedy will have the same ingredients ("Herbal Roulette," 1995).

Another NCAHF article discusses a chiropractor who makes unsubstantiated claims as being "America's #1 expert in natural healing" and "the 'Indiana Jones' of natural medicine" ("Dr. David Williams", 1995, p. 2). Despite his self-reputed importance in the

field, he was absent in the literature surveyed. He has claimed to have "secret of the astonishing new all-natural cancer cure!" and the "secret of the incredible new heart protection vitamin!" ("Dr. David Williams," 1995, p. 2). These kinds of claims, which are prevalent in complementary healing journals (i.e., Prevention, Alternatives) have unsubstantiated, fantastic messages that would certainly appeal to a person desperate for relief of their chronic ailment. Herein lies the dilemma for complementary medicine: there has been little or no scientific evidence as to the efficacy of most complementary modalities. This lack of evidence is used both ways. Skeptics of complementary medicine contend that until scientific confirmation of efficacy exists, it is inappropriate to use the method in question. In contrast, proponents of complementary medicine say that efficacy *has been* proven to work, citing anecdotal evidence.

The largest body of research exists for homeopathy and botanical medicine, with hundreds of studies designed to test them. Environmental medicine has some research basis in that it is an amalgam of various disciplines (allergic and occupational medicine). Craniosacral therapy, as with most manual healing methods, has a minuscule research base. Despite that, massage therapists are one of the complementary practitioners most often referred to by allopathic physicians (Berman et al., 1995). This suggests that it is not the lack of scientific evidence that makes those in the scientific community wary. Though at first glance it appears to be the "evidence issue," something else may be guiding their judgement regarding complementary medicine.

In terms of using traditional, scientific methods to evaluate complementary medicine, the example of the Benveniste study published in Nature (Davenas et al., 1988) demonstrates that opponents of complementary medicine will hold studies that validate complementary medicine to unreasonable or irrelevant standards. The message is "play by our rules but if you figure them out we will change them." As Benveniste pointed out, this

approach will thwart the development of more comprehensive and effective patient treatments (1988).

Similarly, complementary practitioners contend that to rely primarily on scientific methodology as being the litmus test of a therapy's efficacy implies a belief in that method as being the most valid testing tool. When it comes to the complexities and subtleties of healing, some in the fields of complementary and allopathic medicine assert that scientific methodology is limited in its ability to accurately measure human response (Dossey, 1982; McGourty & Hotchkiss, 1993).

Creation of the Office of Alternative Medicine

Complementary health care providers contend that because of the exclusive nature of the physician-pharmacy industry relationship, they have few opportunities and resources to prove the credibility of their methods. Since most of the pharmaceuticals that complementary practitioners use are low cost or non-patentable, there is little incentive to do the kinds of research that accompany the development of highly profitable, patentable medicinals. Furthermore, the financial resources available for allopathic practitioners to provide proof of efficacy are not available for complementary practitioners (Cook, et al., 1994; National Institutes of Health, 1992; Winston, 1994a). It became increasingly clear that funding sources needed to be created for healing modalities that did not have access to mainstream research money.

Aware of the increasing popularity of complementary medicine as well as how little factual information is available on it, the United States Senate intervened in 1992. By congressional order, the National Institutes of Health (NIH) created a coherent research program for complementary medicine. Accordingly, the NIH established the Office of Alternative Medicine (OAM), responsible for allocating and administering its multi-million dollar budget (Marshall, 1994). Examples of the research currently being funded by the OAM include the effects of acupuncture on unipolar depression and osteoarthritis; effects of

hypnosis on lower back pain; effects of massage therapy on HIV infected patients; effects of antioxidant vitamins on melanoma and squamous cell carcinoma (Office of Alternative Medicine, 1995).

The OAM found several barriers to evaluating complementary therapies. Prior to the development of the OAM, federal funds, commonly available for much of allopathic research, were rarely available to complementary medicine practitioners or colleges. This resulted in little or no research. Several complementary medical colleges have research departments but they tend to focus more on determining appropriate doses rather than investigating whether or how a treatment works. Additionally, methodological training for research in these colleges was lacking (National Institutes of Health, 1992). NIH/OAM also found that data exchange in complementary medicine was lacking. There was little communication found between complementary research facilities themselves or their allopathic counterparts. Furthermore, potentially valuable research sources were infrequently used because their research is not typically available in English (i.e., Chinese and Ayervedic medicine).

NIH/OAM made numerous recommendations believed to help complementary medicine overcome these research barriers. Networking was suggested to improve communication as well as facilitate the creation of research teams with a wide array of experience in pertinent research methodologies. The OAM wants to sponsor an information clearinghouse as a means of transferring knowledge to providers, policy makers, and the public. Also, OAM acknowledged the need to take into account limitations of commonly used research methodologies when designing research for systems of medicine with completely different paradigms than those found in allopathic medicine (National Institutes of Health, 1992). These research limitations will be explored in the following chapter.

CHAPTER 4

THE RESEARCH DEBATE

Review and analysis of the literature uncovered the dilemma of complementary medicine seeking legitimacy in the current medical system. Complementary practitioners are regularly criticized for their lack of scientific evidence supporting the efficacy or appropriateness of their healing modalities. This lack of research was evident when reviewing sources to support complementary medicine's claims of successful treatment of otitis.

Complementary providers counter that they do not get the funding necessary to do research, and few research methods accepted are by the medical community that can accurately evaluate complementary treatments. The question is then raised whether the currently accepted scientific approach can actually provide accurate, objective information to study allopathic medicine. This chapter will present knowledgeable professionals on both sides of the issue who are challenging the possibility of objectivity in research.They also contend that the methods being used are in need of substantial up-dating to remain in step with the current scientific knowledge base.

These new positions on scientific research shake the foundation upon which allopathic medicine is based, including widely used treatments for otitis previously described. What can be relied on as being the "truth" is getting more difficult to define. It is an ironic twist that the call for complementary medicine research has resulted in a call for new thinking in allopathic medicine research as well.

This chapter describes the changes in scientific "truths" and what that means for health care research. Additionally, the role of nursing research and new research paradigms will be explored. Finally, OAM research recommendations for healing modalities previously untested or considered "untestable" will be discussed.

Nursing and Allied Sciences' View of Research Methodology

Changes in Scientific "Truths"

As technology advances, scientists discover new "truths" which make the previously held "truths" archaic. For example, Newtonian physics, upon which much of biomedical science is based, claims that all physical phenomenon take place in a three dimensional space, an empty container. According to Newtonian physics, changes in the physical world occur in its own, separate dimension and time and have no connection with the material world. The elements of building blocks which compose the world are believed to be small, solid, indestructible particles. Cartesian principles, which Newtonian physics reinforces, creates a fundamental division between mind and matter, each existing separately and independently of the other. Much of our biomedical approaches to health and illness have been and continue to be based on this mechanistic approach (Capra, 1975; Dossey, 1982; Seaward, 1994).

Twentieth-century advances in atomic and subatomic physics reveal the inaccuracies and limitations of the mechanistic view. The universe is no longer believed to be a machine-like entity with separate and extractable parts but rather an indivisible whole: a web of dynamic relationships of which the human observer and his or her consciousness is an essential part. Space and time are intimately and inseparably connected to form a fourth dimensional continuum. Subatomic particles are interconnected bundles of energy and activity patterns, continually changing (Capra, 1975; Dossey, 1982; Seaward, 1994).

Dossey, a former chief of staff in a Dallas hospital, urges biomedicine to move away from what he and others see as being an outmoded conceptual basis of health and healing:

> While the physicists have been painfully eliminating the flaws from their own models, we have in medicine ignored those revisions totally. We find ourselves, thus, with a set of guiding beliefs that are as antiquated as are body humors, leeching, and bleeding. (Dossey, 1982, p. xiii)

Nursing and "New" Science

The theories of nursing leaders Martha Rogers and Margaret Newman, reflect the application of the new scientific knowledge to the health care profession. Building blocks of Martha Rogers' model have many similarities to the building blocks of the new science: energy fields, patterns, open systems in the universe, and four dimensionality. Rogers asserts that the universe is an open system; as such, determining cause and effect is not feasible; rather, causality is an illusion. Further she states that people and environments are composed of energy fields. These energy fields exhibit their own unique patterns and are continuously open to the influence of others. Based on this, she contends that health care professionals impact the health of their clients on levels that were previously not considered (Fawcett, 1995; Marriner-Tomey, 1994; Newman, 1986).

Margaret Newman has taken Martha Rogers' nursing theory and added ideas distilled from highly regarded writers in the fields of physics, philosophy of science, neuroscience and biochemistry such as Prigogine, Capra and Bentov (Gustafson, 1990). Newman uses the idea of expanding consciousness throughout her conceptual framework (Newman, 1979, 1986). According to Newman, the seen and unseen patterns of our bodies, minds, feelings and spirits form that which is called consciousness. It is from chaos or disorder that order evolves; it is from this interplay that developing consciousness evolves in the direction of greater complexity, higher frequency of wave interaction and greater interpenetration of energy fields (Capra, 1975; Newman, 1982; Prigogine, 1972).

Basic to her concept of consciousness, are the interrelationships of time, space and movement. Physicists have shown that all of life is made up of the energy of matter and motion (Gustafson, 1990). Matter and energy are mutually transformable which means that the energy of mass can be turned into the energy of motion, and vice versa.

> Movement brings about change, without which there is no manifest reality....At the subatomic level, particles have no meaning as isolated entities but only as interconnections of things. The world, then, must be viewed as a complicated network of interrelated changing events, as dynamic patterns of activity, with space aspects and time aspects (Newman, 1979, p. 60-61).

Both Newman and Rogers challenge the traditional view of illness as being on the negative end of the wellness continuum. They view health and illness as expressing the entire life process, which is evolving toward expanded consciousness. The direction of each individual's evolution, as well as human kind's is toward expansion of awareness to greater dimensions (Capra, 1975; Fawcett, 1995; Newman, 1979; 1986).

New Research Methods Sought

The traditional, quantitative approach to scientific research appears to be fairly straight forward. The researcher makes observations, formulates hypotheses and tests those hypotheses by mathematical measurement and statistical analysis. Statistical analysis is accomplished by assigning a numerical value to specific characteristics related to the events or objects being evaluated (Dossey, 1982; Woods & Catanzaro, 1988).

Those in the fields of social science and nursing have long held the belief that there is much in the world of human behavior, illnesses, and healing that can not be measured quantitatively. In recent years, qualitative research methods have emerged as ways of understanding complex phenomenon in context. Qualitative methods include ethnoscience, phenomenology and grounded theory. Examples of how researchers, using these methods, gather information or data would include interview data, participant observation, or written communication (Sampson, 1978; Watson, 1995; Woods & Catanzaro, 1988). Despite these advances in research methodology, a gap remains between what needs to be

researched (i.e. efficacy of complex complementary therapies, how emotions influence illness) and the tools available to research them (Sampson, 1978; Watson, 1995).

Research Paradigms. Watson (1995) describes three paradigms of scientific inquiry: Paradigm I, II, and III. Paradigm I uses a research model which requires a traditional, controlled experimental study design (quantitative) to evaluate, for example, factors affecting healing. A factor such as human caring would be reduced to a technique or technology in order to be measured and/or evaluated. This genre of research is also described as body-machine or mechanical-material physical medicine and is viewed as being ontologically inconsistent with the human science approach described in paradigm II. In other paradigms, it is considered inaccurate if not impossible to design a study which extricates the subject from the environment and the technique or factor being studied from its context (Dossey, 1991; Sampson, 1978; Watson, 1995).

Paradigm II is an extension of the paradigm I approach to research, but it legitimizes subjective data and takes into account context as well as experience (qualitative). When designing research, the qualitative approach considers that the phenomenon to be studied has multiple, interrelated parts (Sampson, 1978; Watson, 1995). "Such a perspective focuses on uncovering the meaning and structure of the lived experiences of the person(s); this method acknowledges the participation of both researcher and subject. The goal of the method is to enhance understanding of lived experiences such as being cared for, being ill, and being healed" (Watson, 1995, p. 66). This research paradigm parallels an era in medicine signified by the rising acceptance and popularity of complementary medicine as well as an expansion of nursing research methodologies.

In the past, nurse researchers attempted to fit their research design into the paradigm I methods because for decades, it was considered the only legitimate, scientific approach. However, many in nursing have long viewed health and healing as complex phenomena, a view that is much better explained by a paradigm II approach (Sampson, 1978; Watson,

1995). Nursing recognizes the value of both paradigms to uncover truths, depending on the type of question asked (Moccia, 1988; Watson, 1995). Nurse researchers also recognize that the need exists for even broader research applicability than that which is accomplished by paradigms I and II (Sarter, 1987; Tinkle & Beaton, 1983; Watson, 1995). Hence, the advent of a third research paradigm.

Paradigm III, also referred to as the unitary-transformative paradigm, holds significant promise for nursing science as well as some areas of complementary medicine research. It moves away from the traditional value of neutrality in research to the value of research as a caring act. The unity between mind-body-spirit and the relationship between humans and the environment is an integral basis of the research process. The focus is on the human experience, energy patterns and fields and therefore can include phenomena that are physical and non-physical.. The methodology is emerging, utilizing a creative combination of unfolding, evolving approaches. Areas of scientific inquiry using this approach include studies of human consciousness, healing remissions and cures, and bioenergy phenomena and healing at a distance (Watson, 1995). In addition to new kinds of research paradigms, like the ones described by Watson, the Office of Alternative Medicine (OAM) made other recommendations to promote the research and dissemination of information related to complementary medicine.

OAM Research Recommendations. The expansion of research methodologies or paradigms is one of several steps that the OAM/NIH recommends be taken to facilitate an evaluation of complementary medicine. OAM also advocates development of a research infrastructure upon which to build a strong research practice. They encourage collaboration with the FDA and public health agencies as well as the creation of freestanding research units in the NIH and major medical institutions. A research database committee would assist with the cataloguing and inclusion of English and non-English research done on complementary therapies. Research training of individuals could be accomplished through

development of conferences, symposia, and fellowships. Collaboration between OAM, complementary medicine schools, and established research institutes would benefit from research training and methodology development. Finally, a peer review system using individuals knowledgeable in the field should be established to evaluate grant applications and appeals (National Institutes of Health, 1992).

CHAPTER 5
SUMMARY AND DISCUSSION

This chapter concludes the paper with a synopsis of otitis and complementary and allopathic medicine, discussion of the power relationship that exists between the two and the role of nursing in the evolution of health care.

Summary

The study of treatment approaches for otitis media provides an excellent opportunity to examine the debate occurring between practitioners of complementary and allopathic medicine. For millions of American children, otitis has become a chronic disease. The standard allopathic approaches--multiple antibiotic treatments and surgery--are being increasingly scrutinized and criticized. Because of recurrence rates, treatment costs, and sequellae, parents and practitioners question the efficacy and appropriateness of these approaches. Complementary medical practitioners assert that they have therapies that would effectively supplement or replace allopathic approaches to otitis. However, most complementary healing modalities have little or no scientific evidence to validate their efficacy, though they enjoy national and international popularity.

Proponents of complementary medicine maintain that the medical establishment has systematically chipped away at their credibility, in part by holding them to standards that are not applicable. To be considered legitimate, complementary therapies have been held up to traditional research methods which are inadequate for evaluating many modalities. Additionally, the federal funding necessary to support any kind of research has not been available to complementary providers or researchers.

Complementary and allopathic providers advocate establishing quality guidelines in complementary medicine to assist consumers in finding remedies and practitioners endorsed by experts in the field. The OAM plans to address issues of research innovation and funding for complementary medicine. Their goal is to find effective approaches to prevention, health maintenance and disease treatment.

Questions raised regarding scientific research and complementary medicine have resulted in closer scrutiny of the entire scientific method as it is applied to allopathic medicine. The common mechanistic approach, based on Newtonian physics, takes pieces of treatments apart in order to analyze or test their effects. Advances in scientific knowledge made in the second half of this century have not been incorporated into research methods used to study allopathic medicine. Rather, the mechanistic approach has been largely maintained despite its proven flaws. More recent scientific advances have demonstrated the interconnections among everything in the universe: a web of dynamic relationships in which the human observer and his or her consciousness plays an essential and inextricable part. This invalidates the concept of objectivity and non-influence on the part of the researcher which is commonly believed to be possible in a traditional, well-designed research study.

Using the traditional research methods, a number of children with otitis are given an antibiotic (sometimes a placebo is included) and observations are made regarding their response. Conclusions regarding the efficacy of the antibiotic are then made. In contrast, research methods based on new research paradigms would approach the issue of otitis treatment very differently. Researchers may rely on qualitative data so that factors such as concurrent nutritional and emotional states, or relationship with the provider could be considered into the healing equation.

Discussion

Power Relationships

The contentiousness some allopathic medical providers demonstrate towards complementary medicine suggests that they see no legitimacy in either these healing approaches or its practitioners. Yet many complementary therapies have been applied and determined to be effective for centuries, before the advent of allopathic medicine. According to a poststructuralistic point of view, practitioners of allopathic medicine have a "power relationship" with practitioners of complementary medicine. Dzurec (1989) uses the poststructuralistic perspective to provide an apt description for what is happening between representatives of allopathic and complementary medicine today.

> Power relations have specific purposes. Certain basic laws or rules are maintained through the network of power relations that pervades society...Power essentially determines all that can and will be known. It pronounces a rule, and it is maintained at all levels of social hierarchy through the day-to-day interactions of involved individuals...When one acknowledges a rule, one simultaneously acknowledges what the rule forbids. As discourse is produced regarding what is forbidden--what the law will not allow--a new knowledge results. New knowledge is produced as individuals become aware of what the law forbids. With this new knowledge comes a shift in power relations, as more and more people learn about and act upon the newly acquired knowledge. (Dzurec, 1989, p.71)

With the advent of the Flexner report (Borkan, Neher, Anson, & Smoker, 1994; Kaufman, 1971) and scientific discoveries such as pathogenic microorganisms and antibiotics in this century, allopathic medicine became the primary power holder in terms of what constitutes legitimate medicine. As such, it has sanctioned the rules with which those practicing medicine need to comply. Complementary medicine represents that which is forbidden. As complementary approaches are explored further, not only will it create new knowledge, but it will also open up a knowledge base regarding how we look at and test allopathic medicine. Framing it in this way may facilitate understanding and result in a positive way to look at what appears to be the inevitable: complementary medicine is challenging the mainstream of our healing culture.

Health Care Changes and Nursing

As nurses move into primary care, they bring with them their practice values which will also change primary care. Nursing practice is not the same as medical practice, yet nurse practitioners are required to follow generally accepted treatment guidelines established under the medical model. The medical model approaches health from an illness or problem orientation: patients come in with a medical problem and that problem is the focus of the visit. There is little focus on prevention or determining the underlying cause of the problem unless it is directly and physiologically related. Nursing, on the other hand, has long held that in order to effectively address health promotion and illness, the provider must first get to know and jointly plan interventions that consider patients in their environmental context and emotional, spiritual and physical states . Education and prevention are emphasized. The movement of increasing numbers of nurses into positions as mid-level providers in a predominantly allopathic system necessitates a second look at the practice of medicine as usual. The influence of nursing philosophy is transforming patient approaches in the primary care setting.

A primary conclusion of this paper is that the mainstream scientific paradigms which predominate in medicine are based on outdated scientific models.

> Our orthodox models in medicine have come to the same fate as the models of the first scientific revolution: they are sadly inappropriate to studies of the living...A feature of such a new model will be its ability to span the heretofore unbridgeable chasm separating a humanistic medicine and a reductionistic bioscience. Any new model must deal squarely with the assertions that we are nothing more than the consequence of our anatomy and physiology, the traditional contention of mechanistic, reductionistic science...No future prospect for medicine could be headier than the potential resolution of this ageless debate. (Dossey, 1982, p. 222)

All health care providers have a professional obligation to expand our knowledge base rather than stifle it. Increasingly, nurse practitioners are adding research knowledge to their already impressive assessment and problem-solving skills. This places them in a particularly good position for being change agents and promoters of meaningful research.

Because nursing shares values with both allopathic and complementary medicine, nurses are also uniquely qualified to facilitate the collaboration of these health care approaches. The result of this team approach holds great promise in terms of creating a health care system that embraces the best of all worlds: the management of people's health care needs "in context"; the endorsement of a wide variety of treatment modalities shown to be safe and effective; the collaboration of health care providers to expand and explore the knowledge base for healing and health promotion. Ultimately, collaboration between nurses, physicians and complementary practitioners will result in significant improvements in the health care available for all.

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APPENDICES

APPENDIX A

PERMISSION TO REPRODUCE

130 Pattee Creek Drive
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e-mail #: turnbull@selway.umt.edu
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Dr. L. Culpepper
International Primary Care Network
Department of Family Medicine
Memorial Hospital
Pawtucket, RI 02860

Dear Dr. Culpepper,

Your permission is requested to reproduce the following material for inclusion in a manuscript of my professional project (graduate level work in nursing).

Tables III, IV, V, VI, and VII, from "Diagnosis and antibiotic treatment of acute otitis media: Report from International Primary Care Network." published in British Medical Journal, 1990, volume 300, pages 582-586.

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Teresa Turnbull, RN, BSN

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I'd be very interested in learning more about your work-
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130 Pattee Creek Drive
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Stephen Messer, N.D.
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Your permission is requested to reproduce the following material for inclusion in a manuscript of my professional project (Montana State University College of Nursing graduate level work on alternative therapies for otitis media).

Table 2-6 on pages 64-66 of Homeopathic Pediatrics: Assessment and Case Management, by Randall Neustaedter, 1991.

Full credit to the original source will be given. Correspondence can be sent to any one of the following. However, if sending permission, please fax it back.

- attention to me at the following return fax number 1-406-243-2016
- to my e-mail address: turnbull@selway.umt.edu
- to my residence listed above.

Your assistance in this matter is greatly appreciated.

Sincerely,

Teresa Turnbull

Teresa Turnbull, RN, BSN

Permission is hereby granted: Lindy Hough 2/2/96
Signature Date

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Sincerely,

Jason Booker
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APPENDIX B

WRITTEN CORRESPONDENCE



August 24, 1995

Teresa Turnbull
130 Pattee Creek Drive
Missoula, MT 59801

Dear Ms. Turnbull:

My apologies for not getting back to you sooner. You had requested information on treating recurrent upper respiratory infections in children. The book I have found very helpful is Childhood Ear Infections by Michael Schmidt (North Atlantic Books, 2800 Woolsey Street Berkeley, CA 94705). He does an excellent job of looking at the problem and his writing is well referenced.

I have personally worked with several children with this problem. My treatment plan usually includes getting the child off dairy products and any other foods they are sensitive to, giving a good vitamin-mineral supplement, improving the diet, supplementing essential fatty acids, supplementing lactobacillus bifidus and giving herbal immune support such as Echinacea and Hydrastis. This has been very successful, the only child who did not respond was one who already had ear tubes and whose parents would not change the diet to a healthy one.

Enclosed is some information on specific herbs. You might also like to talk with the following people:

Nan Dunne-Boggs ND
715 Kensington #24A
Missoula, MT 59801
406-728-8544

Research Dept at Bastyr University
144 NE 54th St
Seattle, WA 98105
206-523-9585

American Association of Naturopathic Physicians
2366 Eastlake Ave #322
Seattle, WA 98102
206-328-8510

14385 S.E. Lusted Road • Sandy, Oregon 97055 • (503) 668-4120 • (800) 332-HERB
Professionals providing natural alternatives for the optimization of health.
(Vis Medicatrix Naturae)

I hope this will be of help to you. Thank you for doing this important work.

Sincerely,

Beth Burch ND

Beth Burch ND

SOUTHWEST COLLEGE OF NATUROPATHIC MEDICINE & HEALTH SCIENCES

September 20, 1995

Teresa Turnbull, RN, BSN
130 Pattee Creek Drive
Missoula, Montana 59801

Dear Teresa:

In response to your correspondence of September 8, 1995.

I think the following book would be helpful to you and hopefully answer most of your questions pertaining to Naturopathic Treatment. Textbook of Natural Medicine, by Pizzorno & Murray.

May I suggest calling Bastyr University, also a Naturopathic Medical school. They should be able to help you purchase the above mentioned book. In addition to this book Bastyr may have other suggestions that would be helpful to you. (206) 523-9585.

If I can be of any further assistance please feel free to contact me.

Yours in Health,

Kareen O'Brien, N.D.
Dean, Clinical Sciences & Research

KO/er

6535 East Osborn Road, Suite 703
Scottsdale, Arizona 85251
602-990-7424 FAX 602-990-0337



October 18, 1995

Teresa Turnbull, RN, BSN
130 Pattee Creek Drive
Missoula, MT 59801

Dear Ms. Turnbull:

Thank you for your interest in alternative therapies in the treatment of otitis media. I have been unable to locate any detailed information on bioflavinoids or picnoginol. I have, however, found some information that I think you will find interesting and useful on astragalus, on lomatium dissectum, and polysaccharide research. Polysaccharides are the main active constituents found consistently in the immune-enhancing herbs.

I am not surprised at the difficulty you have encountered in finding decent herbal research. Since herbal medicines cannot be patented, there is little incentive for research. The only research I know of is from out of the country, especially in Europe, India, and the Far East. Those are the sources of most of what I have enclosed.

Regarding your question on cost effectiveness of alternative medicines, I believe your best source would be the AANP (American Assoc. of Naturopathic Physicians). Their phone number is (206)323-7610. They have done a great deal of lobbying on the state and national levels, and probably have those statistics.

I wish you well with your research, and offer you my assistance in the future as needed.

Yours in health,

Louise Marshall, ND

Louise Marshall, ND

14385 S.E. Lusted Road • Sandy, Oregon 97055 • (503) 668-4120 • (800) 332-HERB
Professionals providing natural alternatives for the optimization of health.
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APPENDIX C

HOMEOPATHIC CATALOG EXAMPLES

See INDEX to products on pp. 28-29

June 1995

Dana Ullman, MPH, Director of HES, assures the quality of every product in this catalogue

See NEW BOOKS on pp. 25-27

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EXTERNAL APPLICATIONS

Important Additions to Your Medicine Cabinet

The Use of External Applications

A *tincture* is an alcohol based product that generally needs to be diluted before application, or it will cause stinging. Tinctures tend to have more antiseptic properties due to their alcohol content. They also allow the skin to breathe more easily, though they are easily washed off.

An *ointment* is usually made with a petroleum derivative which helps moisturize the skin and is more difficult to wash off. However, it does not allow the skin to breathe easily. Ointments are particularly useful on injuries on the hands when other applications may be washed off too easily.

A *gel* is a non-petroleum product and is less greasy than an ointment, can be washed off more easily, and allows the skin to breathe better.

A *spray* is usually made with glycerine and water or with isopropyl alcohol, both of which allow the skin to breathe but are easily washed off. A spray allows for easy application.

A *lotion* is a thin cream or liquid which helps to moisturize the skin.

For more detailed information on the comparative benefits of each of the different external applications, see the chapter on External Applications in Dana Ullman's Homeopathic Medicine for Children and Infants (see p. 6).

HOMEOPATHIC ESSENTIALS

Arnica – *Sprains/Strains*
A great remedy for bruised muscles from injury or overexertion.

Arnica Ointment: **$4.49** [#Q-ARNOINK

Arnica Gel: **$4.49** [#Q-ARNGEL]

Arnica Spray: **$7.39** [#Q-ARNSPR]

Traumeel – *Sprains/Strains*
An extremely effective combination of 13 homeopathic medicines for various types of injuries. People rave about its speed and depth of action. Highly recommended!

External ointment: [#Q-TRAUM] **$13.95**

Liquid internal solution (excellent for both healing injuries and improving stamina)
[#Q-TRA2] **$12.95**

SssstingStop – *Bites/Stings*
A great remedy for both the prevention and treatment of bites and stings. Every home should have a tube of it! (2.5 oz.)
[#Q-STING] **$7.95**



Wart Remedy
Thuja ointment is the most common homeopathic remedy for warts. Made from the arbor vitae tree, this ancient remedy has a very modern-day application.
[#Q-THUJA] **$9.95**

Calendula – *Cuts/Burns*
A fantastic remedy for cuts, abrasions, burns, and diaper rash.

Calendula Tincture:
[#Q-CALTIN] **$6.04**

Calendula Ointment:
1 oz. [#Q-CALOINK] **$4.49**
4 oz. [#Q-CALOIN4] **$6.95**

Calendula Gel:
[#Q-CALGEL] **$4.49**

Calendula Spray:
[#Q-CALSPR] **$7.39**

Calendula Lotion:
[#Q-CALLOT] **$8.59**

Calendula Soap
A wonderfully rich, soothing, and even healing soap. Use it once, and you too will not want anything else.

Small: [#Q-CALSOAS] **$3.29**
Large: [#Q-CALSOAB] **$5.39**

Hemorrhoid Ointment
Hemmorex is a safe and often effective remedy for hemorrhoids.
[#Q-HEMOIN] **$4.29**

Hypericum – *Infected Cuts*
A superb remedy for infected cuts and injuries with sharp or shooting pains.

Hypericum Tincture:
[#Q-HYPTIN] **$7.19**

Hypericum Spray:
[#Q-HYPSPR] **$7.39**

Hypericum Ointment:
[#Q-HYPOIN] **$4.95**

Homeopathic Lip Balm
This lip balm provides wonderfully soothing relief for dry or cracked lips. Contains Calendula, Chamomilla, and Ledum. SPF Rating 8.
[#Q-CALLIP] **$3.49**

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Biochemistry: Twelve Biochemic Remedies.
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Biochemic remedies ("cell salts") are easy-to-use homeopathic preparations, and this is one of the most popular books on the subject. [#CHA-BIO] **$12.00**

The Biochemic Handbook.
J.B. CHAPMAN, MD & EDWARD PERRY, MD.
This pocket-size book is a very popular guidebook at a great price.
[#CHA-HAN] **$1.95**

See also Tissue Reserve Remedies by Drs. Boericke and Dewey on p. 17.

A kit of all Boiron's 12 tissue remedies in the 6x (275 tablets) [#QCS-COMBO] (normally $62.28) Discounted: **$55.00**

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Menopause — For hot flashes, vaginal dryness, insomnia, depression, irritability and other physical or emotional symptoms. [#QM-MEN]

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See pages 4 and 9 for NEW Medicine From Nature™ products

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August, 1994

Homeopathy

With the abundance of drugs and their side effects in medical care today, homeopathy has emerged as an effective alternative method for the use of medicinal substances. It started in the early 19th century, when Samuel Hahnemann, a German medical doctor, discovered that he could stimulate remarkable healing by prescribing medicines in a more holistic way. He carefully observed not just his patient's main complaint, but also other physical, mental and emotional symptoms which he found were very important for selecting the truly curative medicine. In time, he discovered that side effects were virtually absent and curative action most profound when the doses were extremely small. Children enjoyed the pleasant taste, while adults were fascinated to see healing come from something that looks and tastes like plain sugar. The discipline of homeopathy was built on these successes and Hahnemann set down its principles in the ORGANON OF MEDICINE. (see page 9). Today it is practiced by a growing number of professional and non-professional care-givers and has become a powerful weapon against the acute and chronic diseases of modern life.

About this catalog

Homeopathy, as it stands today, has evolved through a colorful history over the last 200 years in several countries. Unlike knowledge in conventional medicine, homeopathic knowledge does not become obsolete, but simply keeps accumulating. Although new contributions to homeopathic literature are always being added, some of today's most widely used books were first published *more than 70 years ago!*

This catalog lets you see at a glance when and where the author lived. (See *Key to the Abbreviations*, this page), so you can evaluate the book in its historical context. We are grateful to have had the homeopathic historian Julian Winston, from the National Center for Homeopathy, and Chris Ellithorp verify most of the dates the authors lived as diligently as possibly.

The Minimum Price

In 1897, a homeopath in Brooklyn, Bernhart Fincke, MD, wrote about *The Principle of Least Action* and homeopathy. Dr. Fincke was aware that *minimal principles* help science explain many natural phenomena. Today, homeopaths everywhere realize the importance of the minimum dose, and this truth is considered by many to be one of the cornerstones of homeopathy.

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Contents

Abbreviations 16
Books
- Beginner's 2-3
- Intermediate and Advanced 4-16
- Veterinary 16
- Other health subjects 3

Bestsellers 16
Correspondence Course 18
Discounts 24
Homeoline information service 19
Index 21-23
Ordering information 24
Organizations 19
Posters 16
Software 20-21
Tapes 17-18

Beginner's

Homeopathic Remedies for Women's Ailments. Engl, 150pp, pb. #214, $11.50

Homeopathy For Emergencies. Engl, 60pp, pb. #12, ~~$5.00~~ $4.80

Homeopathy: A Home Prescriber. Engl, 166pp, pb. This book is half materia medica (82 remedies) and half repertory (most symptoms only have one remedy!). #877, ~~$17.95~~ $16.95

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Tranquillisation The Non-Addictive Way. Engl, 96pp, pb. #522, $7.75

Traveller's Guide To Homeopathy. Engl, 59pp, pb. #246, ~~$5.95~~ $5.60

TANDON, R.K. & BAJAJ, V.R., MD (*, Ind).

Homoeopathic Guide to Family Health. Ind, 501pp, hb. #751, $75.00

TYLER, Dr. M.L. (1857-1943, Engl).

The Romance of Homeopathy. Ind, 32pp, pb. #396, $1.00

Homeopathy Introductory Lectures. Ind, 26pp. #389, $1.00

ULLMAN, D., MPH (*, US).

Discovering Homeopathy - Your Introduction To The Science and Art of Homeopathic Medicine. US, 277pp, pb. "...a clear, concise and fascinating review of the present status and scope of homeopathy for the general reader." -Robert Becker, MD. #654, ~~$12.95~~ $12.50 [$10.36; $8.67]

Homeopathic Medicine for Children and Infants. US, 257pp, pb. #774, ~~$11.95~~ $11.55 [$9.56; $8.36]

VITHOULKAS, G. (*, Greece).

Homeopathy- Medicine for the New Man. US, 160pp, pb. #196, $9.00 [$7.20]

WEINER, Dr. M. (*, US).

The Complete Book of Homeopathy. US, 299pp, pb. #252, ~~$9.95~~ $9.70

WESCOTT, Giri (*, US).

An Explanation of the Science of Homeopathic Medicine. US, 64pp, pb. Foreword by Sheilagh Creasy. The first concise, in-depth introduction to the principles and methodology of homeopathic treatment. Useful to students, patients and practitioners, it covers how homeopathy actually works, how to evaluate the case and what the patient can expect. It debunks myths and popular misconceptions and brings clarity to the subject. NEW! #1444, $7.00

WOOD, Robert (*, US).

Homeopathy - Medicine That Works! US, 261pp, pb. #515, $9.95 [$7.96]

WOODS, Dr. H. Fergie (1883-1961, Engl). Pupil of Kent in 1908.

Homeopathic Treatment In The Nursery. Engl, 12pp, pb. #244, $2.95

Other Health Topics

ANDERSON, D.M., ed (*, US).

Dorland's Pocket Medical Dictionary, 24th Edition. US, 669pp, pb. Invaluable! #519, $29.95

BACH, Edward, MD (1886-1936, Engl) & Wheeler, F.J., MD.

The Bach Flower Remedies. US, 148pp, pb. #745, $9.95

BALL, Dr. John (*, Engl).

Understanding Disease. Engl, 255pp, pb. Widely used as the pathology textbook at the Homeopathy colleges in England. #521, ~~$19.95~~ $18.95

BATES, Barbara, MD (*, US).

A Guide To Physical Examination and History Taking, 5th ed. US, 672pp, hb. The leading book in its field. NEW! #1408, $59.95

CHAITOW, L. (*, Engl).

Vaccination & Immunization- Dangers, Delusions and Alternatives. Engl, 128pp, pb. #10, ~~$13.95~~ $13.50

CHANCELLOR, Dr. Philip M. (circa 1970)

Handbook of the Bach Flower Remedies. US, 251pp, pb. #746, $9.95

COULTER, Harris L. (*, US).

The Controlled Clinical Trial - An Analysis. US, 165pp, pb. #826, $12.00

Vaccination, Social Violence and Criminality - The Medical Assault on the American Brain. US, 300pp, pb. #677, ~~$14.95~~ $14.50

Aids and Syphilis - The Hidden Link. US, 132pp, pb #689, $8.95

COULTER, Harris L. & FISHER, B.L. (*, US).

A Shot in the Dark. US, 246pp, pb. Why the P in the DPT vaccine may be hazardous to your child's health. #718, $9.95 [$7.96]

CURTIS, S. (*, Engl).

Handbook of Homeopathic Alternatives to Immunizations. Engl. Check availability. NEW! #1526, $12.00

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FUTURE MEDICINE PUBLISHERS (*, US).

Alternative Medicine: The Definitive Guide. US, 1068pp, hb. 350 leading edge physicians explain their treatments. Lists important books and organizations for each alternative system. NEW! #1528, $60.00

GASCOIGNE, Stephen (*, Engl).

The Manual of Conventional Medicine for Alternative Practitioners, Volume 1. Engl, 231pp, pb. For diseases of the major organ systems, this book covers symptoms, complications, investigations, conventional and alternative treatment. Check availability. NEW! #1527, $44.00

JAMIESON, M.J., MRCP, and others (*, Engl).

Essential Clinical Signs. Engl, 218pp, pb. Over 400 full color photographs of classical clinical signs, including vitiligo, herpes, candidiasis, geographic tongue, wen, scrofula, desquamation, vesicles, bulla, gangrene, cafe au lait patch, psoriasis, keloid etc. #619, $32.95

KASAD, Dr. Kershasp, M.B.B.S., M.F.Hom. (*, Ind).

Iscador Therapy of Cancer. Ind, 414pp, pb. A modern book on the subject from its roots in anthroposophical philosophy through testing and mechanism of action to clinical application. Foreword by Dr. (med.) Rita Leroi, former head of the Lucas Cancer Clinic in Switzerland. NEW! #1440, $30.00

KRISHNAMOORTY, Dr. V. (Ind).

Bach Flower Remedies. Ind, 181pp, pb. #778, $4.00

LAPPE, M., PhD (*, US).

When Antibiotics Fail. US, 288pp, pb. Suggests antibiotics weaken the system and *encourages* vaccinations. #18, ~~$12.95~~ $12.60

MERCK, (*, US).

The Merck Manual, 16th edition. US. The world's most widely used comprehensive medical reference. New subjects include Sports Medicine, HIV infection, Breast Cancer. #777, $33.95

MILLER, Neil Z. (*, US). Neil Miller is a research journalist and natural health advocate. He lives in Santa Fe, New Mexico with his wife, Susanne, and their two homeschooled children who were not vaccinated.

Vaccines: Are They Really Safe and Effective? - A Parent's Guide to Childhood Shots. US, 80pp, pb. Well referenced - 333 notes referring to sources of information. February, 1994 edition. NEW! #1455, $7.95

MOSKOWITZ, R., MD (*, US).

The Case Against Immunizations. US, 19pp, pb. #285, $3.95

MURRAY, Michael, ND, and PIZZORNO, Joseph, ND (*, US).

Encyclopedia of Natural Medicine. US, 622pp, pb. Herbs, vitamins, minerals, diet, supplements for over 70 problems. NEW! #1467, $18.95

NEUSTAEDTER, R., OMD, CA (*, US).

The Immunization Decision: A Guide For Parents. US, 80pp, pb. #343, ~~$8.95~~ $8.50 [$7.16; $5.99]

NOSSAMAN, N.J., MD (*, US).

More About Immunizations. #286, $3.95

ORNISH, Dr. Dean (*, US).

Dr. Dean Ornish's Guide to Reversing Heart Disease. US, 656pp, pb. Methods compatible with homeopathic treatment. #788, $15.00

ROBBINS, John (*, US).

Diet for a New America. US, 423pp, pb. Compelling reasons - personal, humanitarian and ecological - for a vegetarian diet. #793, $13.95

SCHEFFER, Mechthild (*, Ger).

Bach Flower Therapy - Theory and Practice. US, 240pp, pb. #769, $10.95

SCHMIDT, Dr. Michael A. (*, US)

Childhood Ear Infections. US, 310pp, pb. #709, ~~$12.95~~ $9.95 [$7.77]

Beyond Antibiotics. US, 324pp, pb. #784, ~~$16.95~~ $16.60 [$13.56;$11.35]

SELLER, R. (*).

Differential Diagnosis of Common Complaints, 2nd ed. US, 404pp, pb. A book from conventional medicine used by homeopaths. NEW! #1432, $35.00

SMITH, Dr. T. (*, Engl).

The Side Effects Book - What your doctor didn't have time to tell you. Engl, 850pp, hb. Slightly shopworn. #724, ~~$36.95~~ $19.95

SPEIGHT, L.

Homeopathy and Immunization. Engl, 13pp, pb. #14, $2.50

VANRENEN, L.J. & MANNING, C.A. (*, US).

Bioenergetic Medicines East and West. US, 200pp, pb. Homeopathy and Acupuncture. #154, ~~$12.95~~ $12.65

WEEKS, Nora

The Medical Discoveries of Edward Bach. US, 143pp, pb #744, $9.95

HAEHL, R., MD (1873-1932, Ger). Was responsible for saving many of the valuable artifacts of Hahnemann and retrieving the 6th edition of the *Organon*.

Life and Works of Hahnemann, 2 volumes. Ind, 958pp, hb. The definitive biography of Hahnemann. **#45, $19.00**

HAHNEMANN, S., MD (1755-1843, Ger, Fr).

Chronic Diseases 2 Volumes. Ind, 1,600pp, hb. **#46, ~~$30.00~~ $25.50**

Chronic Diseases (theoretical part). Ind, 269pp, pb. **#43, $4.00**

Notes on Cholera. Ind, 53pp, pb. Includes other authors. **#867, $2.00**

Lesser Writings, R.E. Dudgeon, translator. Ind, 784pp, hb. Follow Hahnemann's thought from his early, dissatisfied days as a conventional doctor to his discoveries that revealed an eternal principle of healing. Experience for yourself Hahnemann's genius and genuine philanthropy in this unique collection of his medical writings. **#44, $11.00**

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Organon of Medicine -

5th ed, Wesselhoeft, C., MD, trans. (1876, US). Ind, 304pp, hb. **#306, $4.00**

6th ed, Boericke, W., MD, trans. (1921, US). Ind, 314pp, hb. Hahnemann's most advanced work - fifty millesimal potencies. Hahnemann believed the 6th edition was *"the most nearly perfect of all"*. It contains important changes from the 5th edition, which were unknown during Kent's lifetime, such as advising repetition of doses in slowly increasing potencies, rather than the single dose. **#47, $5.00**

5th & 6th ed, Dudgeon, R.E., MD, trans. (1893, Engl). Ind, 224pp, pb. Contains a more recent editor's comparisons to the 6th ed. **#433, $4.50**

6th ed, Künzli, J., MD, Naudé, A., and Pendleton, P., translators. (1982, US). This is the most accurate and by far the easiest to read translation. It was undertaken by Alain Naudé on the insistent request of Pierre Schmidt who felt acutely the lack of an adequate English translation. It took several years to translate and was scrutinized several times by different German scholars for accuracy as well as by Dr. Künzli. Dr. Künzli's name comes into it because he was the greatest world authority on the Organon in the original German edition. Translators Naudé and Pendleton constantly checked the translation with him to make sure it was totally faithful to Hahnemann's meaning and intentions in the original German text.

"[this translation] is the only integral English translation of the final edition of this work. It is brilliantly translated. This book is indispensable" -Daniel Cook, MD.

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"[this translation] is an immensely valuable asset for the profession of Homeopathy. The book is very readable and the principles of healing are easy to grasp. I recommend it to all serious students of Homeopathy." -Paul Kenyon, ND.

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"Hahnemann's whole intention transpires much more freely through the original German due to two main criteria most often lost in translation: namely, his verbal continuity, whereby a single term evolves meaning from the different contexts it appears in, e.g. Gemüt, variously translated mind, emotion or disposition; the second, his verbal imagery, which conveys impressions, not information, to the subliminal mind, e.g. erzeugen, (engender) used to describe the actions of the remedies upon the human entity and not the abstract 'cause' or 'produce'. This Haug edition should prove a boon to the serious study of Homeopathy." -Steven Decker

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HART, C.P., MD (circa 1880, US)

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HEMPLE, Charles J., MD (1811-1879, US). Co-editor of the *Homeopathic Examiner*, 1843-45.

Organon of Specific Homeopathy. Ind, 216pp, hb. Note: This is not a translation of the Organon, but a commentary. **#578, $4.00**

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HERING, C., MD (1800-1880, US). The father of American Homeopathy.

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The Homeopathic Treatment of Children: Pediatric Constitutional Types. US, 374pp, pb. *"We want more of this type of modern Materia Medica . . . "* Matilde Flores, LAc. **#404, ~~$18.95~~ $18.50 [$15.16; $12.69]**

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Hyoscyamus. Netherlands, 28pp, pb. **#771, $8.95**

HOA, Dr. J. Hui Bon (circa 1963, Fr).

Carcinosin - A Clinical and Pathogenetic Study. Engl, 11pp, pb. from British Homeopathic Journal. **#273, $3.05**

HOBHOUSE, R.W. (circa 1933, Engl).

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Summer, 1991 (Vol. IV, No. 2) **#659, $11.50**

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Fall, 1993 (Vol. VI, No. 3) **#1447, $11.50**

Winter, 1993 (Vol. VI, No. 4) **#1448, $11.50**

Spring, 1994 (Vol. VII, No. 1) **#1449, $11.50**

HOYNE, Temple S., MD (1841-1899, US)

Clinical Therapeutics (2 volumes). A chapter for each remedy, like a Materia Medica, giving the main diseases and indications for the remedies; numerous case examples; good index of disease names. Ind,1245pp, hb. **#663, ~~$23.00~~ $20.00**

APPENDIX D

TABLE: INDOOR POLLUTANTS AND TOXINS

Complete table on Indoor Pollutants and Toxins from The Natural House Book: Creating a Healthy, Harmonious, and Ecologically-Sound Home Environment by D. Pearson, 1989, p. 51. Copyright 1989 by Gaia Books Limited. Reprinted with permission of the author.

Indoor pollutants and toxins

Substance	Biological effects
GASES	
Ozone (O_3) Unstable, poisonous gas with penetrating odour; protects the earth from dangerous UV radiation. Also generated by photocopiers; exposure of polluted air to UV radiation; appliances with brush-type motors.	**O_3** Decays rapidly into oxygen, but even small amounts are serious irritants to eyes, nose, throat, and respiratory tract.
Radon (Rn) Colourless, odourless, practically inert gas, present in certain geological areas. A serious contaminant which is carried into the home via dust, water, natural gas, and some building materials.	**Radon** inhalation damages lung tissues and long-term exposure is linked with cancer.
COMBUSTION GASES	
Carbon monoxide (CO) Colourless, odourless, poisonous gas from incomplete combustion in gas flames, wood, coal and tobacco smoke, vehicle exhausts.	**CO** reduces absorption levels of oxygen, causing headaches, dizziness, nausea and loss of appetite. Those with heart, lung, and circulation disorders are most susceptible.
Nitric oxide (NO) and Nitrogen dioxide (NO_2) Strong-smelling toxic gases from incomplete combustion of gas flames via cookers and boilers.	**NO_2** is the most toxic of the nitrogen oxides, affecting the respiratory system.
Sulphur dioxide (SO_2) Pungent gas present in coal and wood smoke, and emitted by paraffin (kerosene) heaters. SO_2 was once responsible for urban smogs; now it produces acid rain.	**SO_2** rarely occurs at dangerous levels but it can exacerbate breathing difficulties.
Carbon dioxide (CO_2) Colourless, odourless gas. A combustion product of bottled gas heaters. It is responsible for stale and stuffy air in poorly ventilated rooms.	**CO_2** Continuous exposure may affect the central nervous system and slow down reactions.
VOLATILE ORGANIC COMPOUNDS (VOCs)	
Formaldehyde (HCHO) Binder and preservative with a pungent odour. At room temperatures, toxic vapours are released that contaminate the air. Widely used as a bonding agent and adhesive in timber and plastic products; a preservative in paper products, carpeting, furnishings; a finish for clothing and bed linen. Occurs in combustion byproducts from cooking and heating appliances, as well as in tobacco smoke. Urea-formaldehyde foam insulation (UFFI) foam used prior to mid 1970s is particularly hazardous.	**Formaldehyde** is a potent irritant to skin, eyes, nose, and throat with accompanying headache, dizziness, nausea, and breathing difficulties. It may cause nosebleeds. Suspected carcinogen. Chronic exposure to UFFI vapours causes depression and triggers chemical sensitivity.
Organochlorines Compounds of hydrocarbons and chlorine, which form the basis of many synthetic chemicals. Found in vaporous cleaners, air fresheners, polishes. Organochlorines are the most toxic and persistent of VOCs. They include **polychlorinated biphenyls (PCBs)**, known carcinogens; **polyvinyl chloride (PVC)**, a plastic that can offgas into stored food; **chloroform** and **chloramines**, both toxic gases. **Chloramines** are released when household bleach and ammonia-based cleaners are mixed together. Other hazardous VOCs include ammonia, turpentine, and acetone in cleaners and solvents; naphthalene in moth balls; chlorine in bleach.	Pungent vapours from **volatile organic compounds** are serious irritants to skin, eyes and lungs; they cause headaches and nausea and damage the central nervous system. All are potentially carcinogenic. **Organochlorine** vapours in solvents, pesticides, and cleaning fluids irritate skin, cause depression and headaches, and may damage liver and kidneys. **Chloramine** can be deadly.
Phenols or carbolic acids are caustic contaminants found in disinfectants, resins, plastics, and tobacco smoke. Phenolic synthetic resins in hard plastic, paints, coatings, and varnish contain formaldehyde. Never inhale **pentachlorophenol** found in wood preservatives and fungicides.	**Phenols** are corrosive to the skin and damage the respiratory system.
PARTICLES	
Asbestos Naturally occurring hazardous fibre mined from calcium magnesium silicate, used in insulation and fire-proofing. Banned in many countries.	Airborne **asbestos** fibres are a serious health risk causing asbestosis and cancers.
Microorganisms present in dust include disease-carrying bacteria and viruses, plus moulds, spores, and pollen.	**Microorganisms** spread infections and diseases. They also cause allergies.
Metals Trace elements from lead, cadmium, mercury, aluminium, and copper can be absorbed and accumulate to toxic levels in the body. Lead is present in old water pipes, exhaust fumes; lead and cadmium in paint; mercury in tinned tuna; aluminium is absorbed into food from cookware.	**Lead** and **cadmium** can damage brain and nerve tissues. **Cadmium** can also affect vision. Toxic levels of metals in the body give rise to headaches and breathing troubles.