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INTRODUCTION

A parasite is an organism that acquires its food, nutrition, and shelter by living in or on another organism. There are more organisms in the world that live as parasites than organisms that live otherwise. Over 130 different types of parasites use humans as their hosts. Many species of parasites show no socioeconomic boundaries and may be found in all climates. With the added mobility of our population, people may be exposed to a greater threat of parasitic infection than in the past.

Since parasites can mimic diseases of which we are familiar, it can be a challenge to solve a parasitic issue. Roundworms infection has been misdiagnosed as peptic ulcer, and amoebic colitis is often mislabeled as ulcerative colitis. Chronic fatigue syndrome and yeast infection may really be a case of chronic giardiasis, while diabetes and hypoglycemia can be caused by tapeworm infection. The parasites' own reproductive cycle, in which eggs or cysts are passed at irregular intervals, also makes accurate diagnosis tricky.

The idea of harboring a living organism inside our bodies is repulsive and unpleasant. Learning about them and how to evict them, rebuild our health, and prevent them is the key to improved health and longevity. This is NOT a situation where ignorance is bliss!

HOW DO WE GET PARASITES?

The human being becomes a host through one or more of the four pathways:

- I. Infected food or water (roundworms, amoeba, and giardia)
- 2. A vector such as a mosquito (dog heartworm, filarial, and malaria), a flea (dog tape worm), a house fly (amoebic cysts), and the sand fly (leishmaniasis).
- **3.** Sexual contact with infected partners (trichomonas, giardia, and amoeba).
- 4. Through inhaling and skin contact (pinworm eggs and Toxoplasma gondii can be inhaled from contaminated dust). (Hookworms, schistosomes, and strongyloides can penetrate exposed skin or bare feet).

A number of seemingly unrelated factors unique to the late 20th century have contributed to the unrestrained parasite epidemic and added to the increased risk of parasitic infection. Some of these factors include:

The rise in international travel

The contaminations of municipal and rural water supplies

The increasing use of day-care centers

The influx of refugees and immigrants from endemic areas

The return of armed forces from overseas

The continued popularity of household pets

The increasing popularity of exotic regional foods

The use of antibiotics and immunosuppressive drugs

The sexual revolution

The spread of AIDS

HOW DO PARASITES CAUSE DAMAGE?

Parasites cause damage to the host's body in six ways:

- **1.** They destroy cells in the body faster than cells can be regenerated, thereby creating an imbalance that results in ulceration, perforation, or anemia.
- 2. They produce toxic substances that are harmful to the body. In cases of chronic infection, the body's immune response can be pushed into overdrive, producing elevated levels of eosinophils. Eosinophils are specialized white blood cells that normally combat any microscopic pathogen but when their level is elevated, eosinophils can cause tissue damage resulting in pain and inflammation.
- **3.** The presence of parasites irritates the tissues of the body, inducing an inflammatory reaction on the part of the host.
- **4.** Some parasites invade the body by penetrating the skin, producing dermatitis. During their developmental stage, other parasites perforate and damage the intestinal lining.
- **5.** The size and/or weight of the parasitic cysts, particularly if they are located in the brain, spinal cord, eye, heart or bones, produces pressure effects on these body parts. Obstruction, particularly of the intestine and pancreatic bile ducts, can also occur.
- **6.** The presence of parasites depresses immune system functioning while activating the immune response. This can eventually lead to immune system exhaustion.

Not every case of ill health can be blamed on parasites. If symptoms persist, however, and reoccur at regular intervals after one has been treated for some other diagnosed ailment, then parasites should be suspected.

DO I HAVE PARASITES?

Many types of parasites are so well adapted to living in their human host that no obvious symptoms are presented. They have been called the 'great masquerader' since many of the symptoms of parasite infection are nonspecific and resemble so many other conditions. It is therefore very easy to misdiagnose the cause of illness. If your health problems persist, think parasites. Worms and other parasites such as bacteria, and viruses are the unsuspected cause of many illnesses.

The most common reported symptoms of parasite infection are diarrhea and abdominal pain. It is common that over half of the people with parasites are without obvious symptoms, but there still may be some nonspecific ones that could suggest that parasites are somewhere in the body:

Foul smelling stools that are worse in the afternoon and evening.

Bowel habits have changes over several days or weeks or even months.

Abdominal cramps, rumblings, and gurgling in the stomach area at times different from hunger and eating.

Pains in the chest or heartburn that weren't there before.

Sore and swollen breast not related to the menstrual cycle.

Flu-like symptoms such as coughing wheezing or fever.

Food allergies to many different types of food.

Itching around the anus, especially at night.

Losing weight, yet having a ravenous appetite.

The following are some additional signs and symptoms of parasite infection:

Anemia Hungry all the time Sore mouth and gums

Asthma Immune dysfunction Toxic Feeling

Bedwetting Autoimmune disease Impaired thinking

Bloating Vomiting Intestinal obstruction

Blood in stools Chronic fatigue Crohn's disease

Depression Loss of appetite Digestive problems

Low back pain Dysentery Nausea

Nervousness Rash, itching of skin Flatulence

Shortness of breath Headaches Sleep disturbances

Inflammatory Bowel Disease Irritable bowel disease

Stomach aches or burns Feeling full in the stomach

Joint/muscle aches and pains Itchy skin, ears, nose, anus

Restless, even in sleep Excessive nose picking

Grinding teeth at night

COMMON DISEASES RELATED TO PARASITES

Practically any part of the body can be affected by parasites including the eyes, brain and heart. The most vulnerable area and home to the majority of parasites found in humans is in the small intestine, followed by the colon, blood and lymph system. They can also make their way into the lungs, muscles or other tissues. Some cause pain, others do not, and still others cause cancers.

Colitis Endometriosis Asthma

Breast Lumps Heart Pain Diabetes

Herpes Fatigue Psoriasis and Eczema

Depression Digestion issues Hodgkins Disease

Lymphoma Ovarian Cysts Cancers

Fibromyalgia Rheumatoid and Osteo Arthritis

Enlarged Lymph nodes Lower Abdominal Pain
Elevated White Blood Cell Count Multiple Sclerosis (MS)

Amyotropic Lateral Sclerosis (ALS) Insomnia

GUIDE TO PARASITES

There are five different groups of parasitic invaders:

Protozoa

Roundworms

Tapeworm Family (Cestoda)

Flukes

Spirochetes

Protozoa

This is a large classification of parasites, making up 70% of all parasites. They are microscopic, therefore invisible to the eye, however more people around the world are killed or harmed by protozoan infections than any other type of parasitic disease. Certain protozoan through their intensely rapid reproductive ability can take over the intestinal tract of their host and from there go on to other organs and tissues. Some feed on red blood cells others produce cysts.



Balantidium coli as seen in a wet mount of a stool specimen (photo credit 1)

They are essentially found everywhere in our environment. Most are able to form a resting stage that is very resistant to temperature, chemicals, and drying. This cyst stage is usually the most infectious to man. The cysts are small and light and easily ingested. Individuals with a toxic condition, weakened immune systems, or who are under trauma or stress cannot fight off these parasites.

Many of these parasites are easily passed from person to person during their cyst stage under crowed, unsanitary conditions. Some of them are found in institutions such as orphanages, mental hospitals, day care center, etc. Also infected food handlers should be not be overlooked as many people become infected due to the unsanitary habits of them and other cyst-passing individuals.

Different areas of the body can be affected causing a wide variety of symptoms. Within this general grouping includes many protozoa of the genera:

Isospora: found in the intestines destroying the surface layer of cells.

Pneumocystis: infects the lungs of young children and individuals with suppressed immune systems.

Dientamoeba & Chilomastix: infects the digestive tract.

Sarcocystis: infects the muscle tissue while releasing the toxin sarcocystin.

Balantidium: invades the intestines and eventually other areas while it releases the tissue destroying enzyme hyaluronidase.

Cryptosporidium & Babesia & Retortamonas: common tissue protozoa.

Our environment contains these free living one celled parasites on the surface, soil, and water. These parasites are found in healthy human tissues and exist in large numbers in human cancer tissue, and tissues of those with rheumatoid diseases. Severe stress, injuries, illnesses, and weakened immune systems may precipitate diseases caused by the protozoa.

Diseases that may be associated with protozoan infections:

Arthritis Asthma Colitis

Diabetes Degenerative muscle diseases
Hodgkin's Disease Elevated white blood cell count

Leukemia Lymphoma

Multiple Sclerosis Ovarian cysts

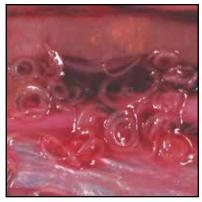
Psoriasis Pyorrhea

Cutaneous ulcers, swellings, sores, popular lesions, and itchy dermatitis can all result from protozoan invasion.

Nematoda (Roundworms)

The adult nematoda produces eggs called ova or larvae. The eggs usually become infectious in soil or in a intermediate host before humans are infected. Unless infestation is heavy, many people do not show signs of disease. Humans can host and coexist with a few worms for years.

Round worms have different known species:



"Anisakiasis Pasasitic Worm" (photo credit 2)

Round worm (Ascaris lumricoides and Ascaris suum) are the most common intestinal parasite in the world as more than a billion people are affected. Adult worms can travel through the body and end up in the liver, heart, and lungs. It resembles the common earth worm in appearance and is spread directly to humans from soil or food contaminated with human feces.

Hookworm (Necor americanus, Ancylostoma duodenal) larvae are found in warm moist soil, and enter the body by penetrating the skin. They are found in people who frequently go barefoot. The teeth of the larvae attach to the intestinal mucosa and rob the body of large amounts of blood.

Pinworm (Enterbius vermicularis) is the most common of all worms in the United States and is most prevalent in children. Transmission occurs through contaminated food, water and house dust as well as human to human contact.

Strongyloides (Strongyloides stercoralis) is unique because the mature adult can reproduce entirely in the human host or grow into a free living worm in soil. Strongyloides produce auto infection in the host and can remain in the body for more than 30 years.

Trichinella (Trichinella spiralis) infection in various stages can be blamed for just about any symptom known to man because it can masquerade as at least 50 more familiar diseases. These tiny round worms are passed on from under cooked pork, but also are found in the muscles of walrus and bear.

Anisakine Larvae can infect humans who consume raw, pickled, or smoked herring or eat other raw or undercooked fish. Sometimes the worms have to be surgically removed.

Dog and Cat Roundworm (Toxocara canis, Toxocara cati) cause a disease called visceral larva migrans, mainly in children. Food, water, and soil contaminated with roundworm eggs are the most common sources of infection.

Filarial (Wuchereria Bancroft, Brugia malayi, Onchocerca volvulus, Loa loa, Mansonella streptocerca, Masonella perstans, Mansonella ozzardi) Including dog heartworm, there are eight species of filarial known to infect people. Transmitted by blood sucking insects and flies, the filarial are microscopic roundworms that cause diseases endemic to tropical Africa, Southeast Asia and the South Pacific.

Symptoms to look for when round worms are involved:

Grinding of teeth at night

Intestinal gas

Allergies

Asthma

Snoring

Digestive disturbance

Anemia

Restlessness

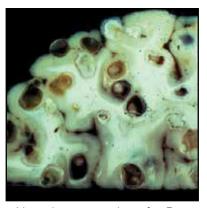
Weight gain around the full moon (sometimes 7-8 pounds)

Cestoda (Tapeworms)

The tapeworms are the largest of the intestinal inhabitants of man. They each have a head that attaches to the intestinal wall. As long as the head remains attached to the intestinal mucosa, a new worm can grow from it.

There are several tapeworms:

Beef tapeworm (Taenia saginata) can be ingested from raw or undercooked beef (rare or medium rare). They can become several feet long and can live in



A human brain overrun with cysts from Taenia solium, a tapeworm that normally inhabits the muscles of pigs. (photo credit 3)

the intestine for 20-25 years, producing symptoms such as diarrhea, abdominal cramping, nervousness, nausea, and loss of appetite.

Pork tapeworm (taenia solium) is shorter than beef tapeworm and infects humans through the eating of infested, undercooked pork. The larval migration which invades the muscles, heart, eyes, and brain represents the most dangerous infections of all the tapeworms.

Fish tapeworm (Diphyllobothrium latum) is the largest parasite found in humans and can be contracted by eating raw or lightly cooked freshwater or certain migratory species of fish. In the intestine it can consume 80-100% of the host's B12, causing pernicious anemia. Symptoms: digestive disturbances.

Dog tapeworm (Dipylidium caninum) is transmitted by infected dog fleas. Children are most affected with the first hint of infection the finding of pumpkin seed particles in their stool or undergarments. Symptoms: restlessness and diarrhea.

Tapeworms can cause:

Mineral imbalances Thyroid imbalance

Intestinal gas High and low blood sugar

Bloating Jaundice

Fluid build-up during the full moon

Trematoda (Flukes)

Trematoda are leaf-shaped flatworms also known as flukes that have two ventral suckers that allow them to attach to their hosts. There are many species of flukes and they are grouped into four types: liver flukes, blood flukes, lung flukes, and intestinal flukes.

With this many different types of organisms there is a variety of ways to acquire the infection. Humans usually become infected through eating raw or undercooked fish or crab, eating infected vegetation, or drinking or wading in infected water.



Lung flukes are found in the lungs and are sometimes mistaken for lung cancer on x-rays. They cause a cough, blood tinged mucous and vague chest pains (photo credit 4)

Blood Fluke (Schistosoma japonicum, Schistosoma mansoni, Schistosoma haematobium) have snails as an intermediate host. The snails release larvae into water, where the larvae can directly penetrate the skin of swimmers.

Liver Fluke (Clonorchis sinenis) is transmitted through the ingestion of raw, dried, slated, pickled or undercooked fish. It inhabits the bile ducts of the human liver causing it to become enlarged and tender. Liver flukes also cause inflammation, chills, fever, jaundice, and a type of hepatitis.

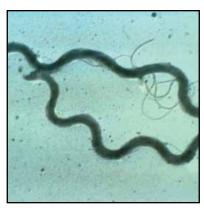
Oriental Lung Fluke (Paragonimus westermani) is found in the Far East and enters the body via infected crabs and crayfish that are undercooked or raw. Symptoms include seizures, a mild cough, rust colored sputum when a victim wakes, and symptoms resemble tuberculosis.

Sheep Liver Flukes (Fasciola hepatica) is usually acquired from eating the larvae worms encysted on aquatic vegetation such as watercress. Worms migrate to the liver and bile ducts where they produce right upper quadrant abdominal pain, liver abscesses, and fibrosis.

Intestinal Flukes (Fasciolopsis buski) transmission occurs from eating plants that harbor encysted larvae such as water chestnuts, bamboo shoots and lotus plant roots. Symptoms include diarrhea, nausea, vomiting, abdominal pain, and facial and abdominal edema.

Spirochetes

Spirochetes are a group comprised of six genera of bacteria in a family known as Spirochete. This bacterium is a spiral formed organism, typically slender, which has some characteristics of protozoa. Their length can vary from about five microns (millionths of an inch) to several hundred microns, depending on the species. Under the light or electron microscope, the tight coiling that is characteristic of spirochetes is readily visible. Spirochetes are a significant health threat to humans as they multiply



Long, slender, helically curved Spirochete (photo credit 5)

in the blood and lymphatic system. Both syphilis and Lyme disease are caused by spirochetes. Treponema pallidum is the cause of syphilis and Borrelia burgdorferi is the cause of Lyme disease, which can produce a chronic infection that can result in arthritis, damage to the central nervous system, and even heart failure. Borrelia burgdorferi can convert to a metabolically dormant cyst in natural environments and even in humans. The cyst form allows the bacterium to survive inhospitable conditions and to elude host immune defense mechanisms.

Sources of spirochetes include, mud, sewage, polluted water, ruminants' (cows, sheep, goats, deer, etc.) stomachs, muscles, and oysters.

TREATMENT OF PARASITIC INFECTIONS

There are many options available to treat parasites. First we should cleanse the intestinal tract, second modify the diet, and third we need substances that help eliminate parasites.

Herbs

Herbs have been used for thousands of years all over the world to eliminate parasites.

Black walnut	Turmeric root	Wormwood
Ginger	Senna	Mugwort
Elecampane	Peppermint	Onion
Garlic	Caprylic Acid	Fennel seed
Pumpkin seed	Gentian root	Chlorophyll
Lemon leaves	Sage leaves	Tansey leaves
Red Raspberry	Areca nut	Bentonite clay
Black pepper fruit	Fenugreek seed	Chamomile
Cascara sagrada bark	Grapefruit seed extract	

Essential Oils

Essential oils have been used since ancient times to help rid the body of parasites. Oils may be applied on the stomach and feet or directly on the problem. Some may be taken internally.

Bergamot	Roman Chamomile	Clove	Cypress
Fennel	Myrrh	Thieves	Coriander
Juniper	Black Cumin	Lavender	Melaleuca
Rosewood	Mountain Savory	Spikenard	Neroli
Tangerine	Peppermint	Tarragon	Thyme

Homeopathy

Homeopathy is also widely used in treating parasites. The following homeopathic remedies should be explored and considered for treatment:

Arsenicum Album Bacillinum Chelidonium

Chenopodium Cina Filix-Mas-Aspidium

Graphites Naphthalene Santonin

Sepia Spigelia Tanacetum Vulgare

Tellurium Teucrium Marum

Cell Salts

Tissue salts are also an option for treating parasites.

Nat Phos Calc Phos Nat Sulph

In summary it is best to seek the help of a qualified natural health practitioner to help with parasitic infection treatment.

REBUILDING HEALTH

After ridding ourselves of any kind of scavengers and clearing our body of them, it is time to consider rebuilding our health. It is important to eat fresh organic nutrient dense clean food in order for the body to have a chance to heal itself.

If lung flukes were an issue: Natural Vitamin A, E, and Lung Formula (an herb formula for the lungs).

<u>To repair the liver</u>: Goldenseal, goldenrod, cloves, B-Complex, Vitamin E with maple syrup and calcium.

After blood flukes or spirochetes: One gallon Hyssop tea a day for 2 days and no food.

<u>For protozoa</u>: Two teaspoons liquid chlorophyll in 4 ounces water 2 times a day and minerals.

<u>To rebuild the intestines</u>: A good probiotic is very important to keep the intestines healthy.

Other various herbs:

American Centuary Areca nut Artemesia Annua

Betel nut Betony Birch

Birds Tongue Black walnut bark white walnut
Carrot Chapparal Comfrey leaves

Elecampane Everlasting Fennel seed

Fern-female Fraxinella Garlic

Kousso Grapefruit seed ext. Lemon leaves

Mulberry bark Mullein leaves Onion
Papaya Pink root Plum

PomegranatePride of ChinaPumpkin seedsSageSennaSesame seedsTamarindTurtlebloomWalnut hullsWafer ashWormseedWoundwort

Again it is wise to seek professional guidance on a rebuilding health plan.

PREVENTION

Since parasites are difficult to find and often more difficult to treat, the best solution is to prevent them in the first place. We need to keep up our defense systems to avoid offering an open invitation to these opportunistic critters. Our best defense is a strong immune system which we must maintain. We must also be aware of the risks of parasitic infection in our everyday lives and learn to avoid them.

Good personal hygiene is important.

Avoid water-borne disease by drinking only filtered water.

Treat all foods in a special cleansing bath (vinegar and water)

When traveling get pre-travel information on food, water, and other hygienic practices.

Practice safe sex and avoid certain sexual practices.

Deworm all pets and wash hands after petting them. Only clean up messes with gloves on.

Parasites cannot infect a healthy body in a healthy environment.

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Prior to becoming a Naturopathic student, Amy Graham retired as a public school teacher with a degree in Music Education from Bowling Green State University in Bowling Green, Ohio, a Master's Degree of Educational Arts from Defiance College in Defiance, Ohio and Post Graduate work in education at Walsh University in North Canton, Ohio. Additional graduate work was completed at BGSU and Vandercook College of Music in Chicago, Illinois.

Amy completed the requirements for certification as a Traditional Naturopathic Doctor in February 2016 from The Naturopathic Institute of Therapies and Education in Mt. Pleasant, Michigan and she passed the American Naturopathic Medical Certification Board test in October of 2015. She also completed courses at the International Institute of Reflexology and Clayton College of Natural Health in Birmingham, Alabama.

Amy has been interested in health and natural living most of her adult life. Her pursuit of Naturopathy as a career began after a near-fatal motorcycle incident threatened the amputation of her left leg and the likely need for cadaver parts in her right leg. Doctors and surgeons were surprised by the healing of both legs facilitated by using natural methods. Her orthopedic surgeon called it a "great save"! Sixteen modern surgeries put her leg back together and traditional natural modalities, natural practitioners, and prayer healed her other injuries and saved her leg.

In her practice, she provides wellness consultations for holistic health, diet & nutrition counseling, biofeedback, Light Healing Touch, cleansing/detoxifying programs, reflexology and additional natural health modalities.

Schedule a consultation with Amy at Edison Chiropractic today!

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