

# Chronic Pain~ from Inflammation & Behavior

A Newsletter from Robert Gallup, Ed.D.



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## “Anti-inflammatory Behavior” ~Real Healing on The Road-Less-Traveled

*In previous issues I have detailed my path to Psychoneuroimmunology (PNI), and the connections of behavior and inflammation. We do not have chronic symptoms such as pain or fatigue because of a single health factor. For these symptoms to become chronic it takes time and qualitative change. Very likely, if pills or discrete techniques could make a long-term qualitative difference you would not be reading this right now. The purpose of this Newsletter is to provide information to frame the real problems, as well as the behavioral changes which can be made that will lead to a qualitatively better life for those who suffer from the symptoms of chronic inflammation. This Newsletter is planned to be published three times a year.*

A primary objective of (PNI) is to learn the reciprocal influences of the immune, endocrine, and nervous systems and their effects on health and behavior. The functional and anatomical (chemical and fiber) enmeshment of these systems is now a given. Other critical understandings from PNI which have great impact on etiology and healing processes are that the inflammatory response is an integral part of the “stress response” (psychogenic and non-psychogenic) and visa versa and that chronic inflammation is a common denominator in chronic disease.

The next issue:

- Individual Perception, Inflammation, and Pain
- Guest Contributor
- Healing Happens!!
- Recent research in PNI

Inflammation is not pathological. Acute inflammation is necessary for survival. We would die from an accidental cut, bump, infection or surgery. Inflammation is healing when it is balanced by the anti-inflammatory system. In the acute-inflammatory cycle our body will turn on (through a negative feedback loop) the anti-inflammatory reaction. An example, is that the HPA-axis (Hypothalamic Pituitary Adrenal-Axis) is automatically stimulated by the production of inflammatory chemicals, anywhere. The glucocorticoids act to douse the inflammatory flames in an acute scenario. Health is from a functional balance of anti- and pro-inflammatory systems.

Chronic inflammation can become the near continuous secretion of pro-inflammatory chemicals (cytokines such as Il-1, Il-6, and TNF-a) because of the near infinite range of possibilities which can cause immune cells to produce them. Individual perception, alone, can directly lead to their secretion by immune cells. Other examples of every day behavior which can stimulate these chemicals are sleep patterns, diet, and musculo-skeletal stress. Inflammation is chemical, and therefore can travel from

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one location in our bodies to another. These pro-inflammatory cytokines can cause any combination of symptoms such as pain, fatigue, loss of appetite, musculo-skeletal changes, fever, depression, redness of the skin, mania, anhedonia, cancer, and pathological changes in any tissue in any organ (aka “sickness behavior”).

It is our typical behavioral patterns/habits which are causing **chronic** inflammation. Changing our patterns is a necessary condition for the real healing of chronic inflammation and achieving a healing balance of anti- and pro-inflammatory systems. Many of us who suffer with chronic inflammatory diseases of one kind or another learn that there are no pills, surgeries, or techniques by any practitioners of any stripe that cure and can overcome our behavioral patterns.

The best of these can be palliative (provide comfort and maintain the highest possible quality of life) and do no harm. The ball is really in our court. More good-news-bad-news is that simply stopping the “bad”-health-behaviors is not enough for real healing. Our bodies must secrete sufficient anti-inflammatory cytokines (such as IL-10) and tissue building chemicals over time to truly heal the damage done by the usually-on pro-inflammatory system. Healing takes time. Also, chronic inflammation is usually chronic because the pro-inflammatory chemicals are being secreted as a result of conditioning (as noted in previous editions of this Newsletter). Thus, inflammation becomes chronic, at least partially, as a result of the conditioning of the secretion of these chemicals to stimuli/behavior, which may not have been stimuli which started the acute process, initially. So, the re-balance takes time and the threshold/set-point for the secretion of pro-inflammatory chemicals must be edged upward as healing takes place and our Bodymind achieves a much more pleasant level of homeostasis.

Here it should be noted that the most current research is finding that “set-points” for pro-inflammatory cytokine secretion, activation of the HPA-Axis and sympathetic/parasympathetic nervous systems (SNS), is first calibrated during pre-natal and early development. In addition, any significant trauma (to our spirit and/or tissue, such as physical, sexual, or emotional abuse) usually has long-term effects on the “set-points” of these systems. Inflammatory chemicals can be secreted as a result of the chronic activation of the HPA-Axis and/or the SNS. Real healing takes time, support, information, discipline, and hope.

In practice, clients must have positive health behaviors to replace those which they identify as contributing to the chronic production of inflammatory chemicals. Behaviors which are known to stimulate the anti-inflammatory system must be emphasized for healing. The conditioned inflammatory reaction developed over time, and thus will not be extinguished in a snap. It takes time to reduce inflammatory-load.

**Prime barriers to real healing/qualitative change:** (from my experience of over thirty-five years of conscious/daily working to change my own Health Behaviors and professionally assist others):

1. Our “set-points” are initially calibrated so early in life.
2. Usually our “set-points” are very close to and encouraged by our parents, families and friends. (we usually hang with people like ourselves).
3. **Our society demands that we act on the “wants,” it consciously creates for us, to consume and behave in ways that are very frequently in direct opposition to our real “needs.” This encourages the very behaviors which are an integral part of our dis-ease, often discouraging the opportunity to look for behaviors which promote our real health.** For example, eating French fries or owning an I-Pod are created and reinforced “wants.” Eating vegetables and having intimate social connections are “real needs.” Some of us never learn the difference between “wants’ and “needs,” and/or feel unable to make the qualitative change. In our society, acting on our real needs can be a defiant and threatening act

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against what is expected>> definitely the road-less-traveled.

**4. Chronic inflammation is multi-factorial. There are not quick or easy cures.** Practioners of “mainstream” as well as “alternative” health techniques tell us to come to them to have something given or done to us, which will take care of our problems/dis-ease. The causes given for our dis-ease may range from germs to muscle weakness to our need for a specific substance (pharmaceutical or otherwise). Often these are temporarily helpful/palliative, so we keep going back to these techniques while behaving/living as we usually do, **We must take personal responsibility.**

5. It is implicit and sometimes explicit that we need “experts,” who have licenses and credentials to really “know” what is going on in our bodies. In fact, of course, we could teach each other beginning in early childhood what is generally necessary for each of us to learn, to attend to, and nurture ourselves. This would not require that each of us learn Molecular Biology, for example. The generally useful concepts from this science, or most any other, could easily be put in terms that we could learn during the first twenty years of our lives.

### Healing Behaviors

My experience clearly and absolutely tells me that it is our strengths (positive/health-promoting behaviors) that are most critical to being able to really heal and change, rather than simply our abstention from “bad behaviors”. Our strengths enable us to abstain and to learn new behaviors. It is our strengths which give us the ability to persevere and handle the difficult emotions and challenges which must necessarily occur over the time it takes for real healing. Soooo, what are some **behaviors that are known to stimulate anti- Inflammatory systems and promote real healing** (mediated by the immune-nervous-endocrine systems connections)??

Most importantly, our fundamental needs for food, shelter, and safety must be met.

- Willingness to take personal responsibility.
- Generally, positive emotional>cognitive framing of life’s events.
- Experiencing>feeling>knowing>sharing our deepest feelings
- Having people to profoundly share our life experiences with.
- “Connection” with our communities.
- An **individually** healthy diet, which most often provides the right chemical at the right place at the right time.
- Our musculo-skeletal tissue and systems must be readily able to do what we do, without significant strain.
- Having a productive activity in which we regularly can experience passionate-focus.
- Experiencing a strong sense of self-efficacy related to at least one role and/or activity that is important to us.
- Connection to a power-greater-than-ourselves.

### Recipe for Healing and Change

All of the above have much literature expounding their health benefits over generations (the last can be controversial). None should be a surprise to anyone. The real issue is how to make the changes. The necessary ingredients to begin “a healing journey” seem to be:

- We must feel badly/fearful enough, having tried many of the usual techniques (sometimes referred to as having ‘hitting a bottom”).
  - Hope, courage, and willingness to take personal responsibility.
  - Information (such as the real causes of the chronic symptoms we experience).
  - Support (such as from a Health Behavior Specialist/Coach, and friends/family).
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## Health Benefits of Chronic Pain Support Groups, by Mary Julian Phillips, PT

### Evolution of Support Groups

Throughout humankind, humans have relied on others for survival. Tribes, clans and empires all helped the proliferation of the human race. Even more modern concepts of towns, cities, states, churches, local organized unions and political parties are some of the examples of groups of people that share a common interest. It may be power, money, faith, a common goal, etc. For other groups, the common bond may be hardship: survivors and victims, those suffering from addiction, disease, and of course, chronic pain. However, for all support groups, their purpose is to help its members to develop and maintain a certain quality of living.

### Role of Support Groups

These groups provide certain nurturing functions and act like extended families. In addition support groups (such as in the Alcoholics Anonymous Model), support veers toward helping those involved overcome or move beyond their condition. Regarding disease, support groups provide information, resources, act as a clearing house for experiences, and serve as a voice for those afflicted and their families. People who have struggled through life-changing hardships are often isolated, misunderstood, judged, and labeled by those around them. They feel alone. "You don't understand what I've been through." "You can't possibly feel what I feel." "How would you know?"



Support groups, particularly for those who feel alone in their struggle, are a vital part of helping to cope with daily challenges. Hearing the words "I understand," often has a powerful healing value. It may also come with shared ideas on how to cope physically, emotionally and socially.

### Health Benefits of Support Groups

Group therapy approaches can reduce pain and improve functional status significantly. Past studies, Turner & Clancy, 1988; Bradley et al., 1987; Parker et al., 1989; and Keefe et al., 1990 all had documented evidence. In summary, they found the patients who learned behavioral pain-coping skills throughout their group sessions had the best outcomes. The Alcoholics Anonymous Model is used internationally. Many of its core processes are utilized in most every group which calls itself "a support group." "Unconditional acceptance" is one such process, and one of the most powerful.

At the Lemons Center when a client enters our comprehensive pain management program they often wonder how they will ever improve. As they observe others around them working hard to overcome their functional limitations, they gain the courage and motivation to do so themselves. Roadblocks that have prevented a client from progressing in traditional rehab settings may lose this negative power, when the client no longer feels that they are unique to them. Instead, the problems or problem behaviors are treated as obstacles that we help clients overcome.

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When looking for a good doctor, chronic pain clients gladly share their experiences. It may include bedside manner, wait times in the office or level of expertise. It may be that the doctor has had the same nurse in their office for years, or that there is constant turn over of staff. Chronic pain clients are also very knowledgeable regarding health care products. They are usually very current on the newest products on the market, and which stores have them at reasonable prices. Examples are equipment and information. Frequently, among group members, they've tried every back brace, mattress, pillow, electronic device, topical ointment and therapeutic intervention that promises pain relief. Support groups provide great community resources for health care providers.

Support groups provide a mentorship. Clients teaching clients based on similar experiences is one of the most valued learning tools our Center has to offer. My role as the Rehab Specialist is to develop comprehensive exercise programs, educate our clients in posture, body mechanics, pacing, energy conservation, work simplification, office ergonomics, and self management skills. I am the "problem solver". I challenge my clients with new ways to walk, move, and live. Sometimes these recommendations are well received, and sometimes they are not. When I recommended that a client unload half of her purse contents and re-prioritize what was necessary for her to carry, my comment was met with poor reception. I had educated her on posture, anatomy of the spine, basic leverage and physics laws, in the context of her degenerative disc disease and disc protrusions. I had provided all that I had to offer. She politely acknowledged and declined my recommendations. Ten minutes later, an observant client walked in and said to her, "How can you carry such a heavy bag? If I tried to carry something that heavy, I wouldn't be able to make it out to the parking lot by myself." That brief comment, compared to my twenty minute dissertation, was all that the bag-carrying client needed to hear. The next day, she came in with the bag five pounds lighter. My mission was accomplished, thanks to another client.

Support groups offer friendship, support, and encouragement. My clients are cheerleaders when someone achieves a milestone, even when it's a small one by some standards. Chronic pain clients celebrate all of their victories. They also pull together as a strong team when one of them has a setback. Many of our clients maintain long-lasting friendships once they have completed the program. Some prefer email contact, others meet for lunch once a month. Whatever their communication, they leave the program feeling connected to others. That connection gives them strength to deal with daily challenges. It also helps those who have "slipped" in their program compliance to get back on track by talking to a friend who knows the "excuses."

### Life-long Benefits

The value of support groups, when it comes to helping guide a client through a chronic pain journey, cannot be overestimated. I feel I owe a large part of my success with chronic pain clients to the support system that our comprehensive program offers. I would much prefer to have a client in our full program, rather than see them individually. As a direct result of the groups, clients benefit in triple what they put into their program, and many of those benefits are life lasting.

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## Healing Happens!! (Pain & Anger)

*(In previous issues the case studies have generally demonstrated the long-term success of Applied PNI. I work very hard to try to assess the client's needs and current resources for real change/success, **before** any mutual commitment is made. This is a client where my ability to predict a successful short-term outcome for our relationship turned out to be wanting.)*

Dave was a fifty-three year old hospital Social Worker. He has two teenagers, and his wife travels "a lot" to sell products for a local software company. His main complaints were: "I've had chronic pain and frequent upper respiratory infections for several years. I've tried everything. I've been to many doctors and I recently tried the program in the University's Pain Clinic. I've seen Psychiatrists, Physical Therapists, Neurologists, Chiropractors, taken tons of antibiotics and pain killers, and more." "Seems, one of my main issues is too much anger." Dave appeared to have self-awareness, he'd tried many approaches, and showed ability to be vulnerable concerning his issues.

We met when Dave attended a three-hour community presentation on "Healing Chronic Pain & Fatigue," in a small group setting, which allowed each participant to present their story and get some sense of how they could begin to use PNI for healing. Dave then asked to see me individually.

**Initial Assessment** (Please note that I almost always perform these in the future-client's home)

Dave's strength and all other neurological functions were normal. He rode a mountain bike five to eight miles three times a week, went to the gym for weight training and cardio three times a week, and worked in his garden. His perception and cognition were at least normal. He had two Master's Degrees. Dave had read many books on nutrition, pain, and various healing practices. "I eat a very healthy diet." He was six-foot tall and slender at 160 pounds. He had tried "to learn to meditate, without success." "I am a very anxious person." He revealed that he had recently been ruminating about his childhood and remembered that "my father had been extremely critical, very over-controlling, yelled a lot. This must have something to do with my anger." Dave had not been in psychotherapy. He had a very painful right shoulder, lower back, left wrist, and right foot. "I'm still fighting this cold I've had for weeks." Dave expressed a lot of positive impressions of my approach and a great deal of hope for an improved quality of life after this two and one-half hour assessment. I had explained how PNI could be applied to his problems and that he would be trying to improve/add Health Behaviors which promote anti-inflammatory systems while reducing/eliminating/replacing behaviors which are very likely to be contributing to his inflammatory-load. He agreed to perform a two week Discovery Journal. He would record everything he did, what he ate and drank, and his pain levels three times a day. I proposed that we meet every other week and make an initial contract for what changes he embark on to improve his Health Behaviors. Dave enthusiastically agreed to begin and wanted to meet more often than every other week. When I suggested that most of my clients experience anger, sadness, and anxiety related to the agreed-on changes he smiled and said, "I'll be fine!"

**Discovery Journal**

Dave ate breakfast each week-day after a "workout," and before arriving at work by 8AM. Generally, after work till sleep there were errands, supervising "study hall" at home for his children, more workouts, taking care of his garden, contact with friends, and prep for work. On the weekends, Dave went to sporting events with his friends and/or sons. One son was in the midst of a second year of "falling grades and lying about meaningless things." When his wife was home she would share some of the above family duties. They had "social time" of one kind or another about once a month. Dave described their "sex life as kind of bad." He had belonged to a local church for many years, but left after "a falling out over church policy." His wife still belonged to the church and he'd "lost some good friends." Dave did indeed eat quite well. He ate vegetables and fruit twice a day; whole grain breads; generally, low-fat protein twice a day, and un-sweetened beverages. "I try to drink water all day long." Habits which were suspicious for contributing to chronic inflammation were: "a glass of wine before sleep;" the daily cheese he ate, and added liberally in most (Continued on page 7)

meals, the “sweet snack my blood sugar needs in mid-afternoons,” and, of course, his general rage and anxiety. Dave reported that his pain numbers were: “worse as the day went on,” “from 1-2/10 in the early morning to 8-9/10 before sleep.” “Often, I wake up and feel like my cold is gone, but as the day goes on... .”

### Where We Began

I performed an ergonomic assessment, and made suggestions, in his home. Dave immediately reacted very angrily to these suggestions. We did a Progressive Relaxation Training. He agreed to try it himself at least three times over the next week. I also, suggested that he reduce his physical activity to either a bike ride (limited to three/four miles or a gym workout every other day) only lift weights with his spine fully supported in a supine position, try a three month trial of no cow’s milk products, and substitute nuts and grain snacks for the sweetened ones. The purpose here was to reduce inflammatory-load. Dave agreed to the suggested activity limitations, but, literally screamed out, “I will never give up my cheese!! A little candy can’t be causing my problems! And, I don’t know if I will ever be able to relax.” Yet, he was still making positive statements about my approach as we shook hands as I left his home.

### The Next Session

We had agreed to meet in my office so that he could feel “more relaxed about trying to relax than I can at home.” Dave began the session with, “You know I’ll never give the cheese!! And, I know you’re going to tell me to see a therapist about my relationship with my father and how that led to my anger and over-controlling. What you said about abuse and how the nervous system causing inflammation is probably true, but I don’t believe that therapists can help. I understand the problem, so that’s enough!”

I listened calmly, then reiterated how our nervous<>immune systems are run by our real emotions much more than our cognition. Also, that cow’s milk products are well-known as suspicious for being part of allergic/inflammatory reactions with upper respiratory and/or depressive symptoms. I suggested a one month dietary trial where he would replace cow’s milk with soy or rice milk for his cereal and beverages, and gentle herbal teas otherwise. I reminded him that he had told me that, “I’ve tried so many things your approach seems like my best shot.” He calmed slightly, and agreed to try to relax through a Progressive Relaxation Exercise I would lead. When we finished this exercise, he stood up and yelled, “this isn’t helping! It’s a waste of my time and money!” He left the building. A few days later I received a phone call from him repeating many of his above statements. He wanted to “officially end our professional relationship.” When he finished talking, I suggested that his own instincts that his relationship with his father may be a significant factor in his current pain were very good ones, and that I hoped that he would pursue help when he is ready.

### Dave

PNI research is clear that chronic hostility, chronic activation of the adrenals (corticosteroids), and chronic activation of the sympathetic nervous system (catacholamines) stimulate chronic production of pro-inflammatory cytokines. Then, of course, these cytokines stimulate production of these same stress chemicals. **It is circular.** This is why so many find that their chronic symptoms are so hard to lose. In the first article in this Newsletter there was focus on “barriers” to real behavioral change, and the “conditions’ which need to be present in order for a person to “be ready” to take on the sadness, anger, and general challenge of qualitative change. Most “treatments’ do not require us to make qualitative changes in our Health Behaviors. Dave had childhood issues he was not ready to take-on. His relationship with his wife was not a source of emotional support. He was isolated and resentful of others for his conditions. He was not yet ready to take the personal responsibility to embark on an approach to truly healing chronic inflammation which is still the-road-less-traveled.

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## Robert S. Gallup, Ed.D. Chronic Pain Specialist



### Learn to Heal

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### Recent PNI Research

*The purpose of this section is to “translate” recent PNI research for immediate functional use. The statements below are based on research reported this summer in the journal Brain, Behavior, and Immunity, which is the official journal of the Psychoneuroimmunology Research Society.*

- In general, the stress response is designed to be of limited duration and the resulting changes in hormone and neurotransmitter activity are rapidly restored to pre-stress levels within minutes or hours. However, when stress is chronic and the individual fails to cope well with it, prolonged activation of the hypothalamic-pituitary-adrenal axis (HPA-axis) and the sympathetic nervous system may occur, resulting in alterations of immune competence. Also, chronic inflammation keeps this nervous system reaction chronic.
- Chronic and acute stress will evoke changes in the immune system which lead to susceptibility to various immune-mediated dis-eases including autoimmune and infections. This is due to the multiple physiological and functional connections between the nervous, endocrine, and immune systems.
- Since “stress” is in the perception of each individual, **“individual perception” must be considered a prime independent variable** in the etiology of dis-ease.
- It is probable that environmental conditions (often by way of individual perception) during critical “windows” throughout development program homeostatic systems (such as the pro-inflammatory/anti-inflammatory balance and the “fight-flight reaction) that shape our phenotype (environment + genetics = phenotype).
- It is now well accepted that there are gender related differences in humans and other mammals in the response to immune challenges and that the sex hormones progesterone and estrogen are involved as well as various neurological gender differences.