

A Guide to Understanding and Healing an Autoimmune Disorder
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An autoimmune disorder is a disease that occurs when the body mistakenly attacks normal healthy tissue instead of a pathogen or other infectious agent. The immune system can no longer detect the difference between healthy and hostile body tissue. Our normally beneficial immune system becomes hypersensitive (similar to an allergic response) thus, destroying healthy tissue in varied parts of the body. According to autoimmune statistics, over 50 million people in the U.S. have an autoimmune disease with 80+ variations. It is 78% more common in women than men, making it the 8th leading cause of death in women.ⁱ

Conventional medical thought says that autoimmune diseases are incurable, but the symptoms can be managed. Many of the conventional treatments currently available are biologics like Humira, Enbrel, Remicade, Orencia and Xeljanz.ⁱⁱ Not only are they prohibitively expensive, but because the work by (in essence) shutting down the immune system, they can make you feel substantially worse. They can also cause serious side effects such as tuberculosis, lymphoma, liver problems, intestinal bleeding, gastrointestinal issues and have a high likelihood of causing overwhelming infection and even cancer.ⁱⁱⁱ

In October of 2015 while I was pursuing a degree in Health Psychology at UC Davis, I began struggling with severe pain in my sacrum and SITS bones, making sitting in class extremely uncomfortable. I also began suffering severe and debilitating gastrointestinal pain (bloating, diarrhea, constipation, vomiting) that my Dr.'s could not seem to find any cause for. Through pure chance, a specialist I saw happened to have an autoimmune disease called Ankylosing Spondylitis (AS) and so recognized the combination of symptoms. He sent me to a rheumatologist who found I had the gene HLA-B27, diagnosed me with AS and prescribed me Humira. As I read up on the side effects for this biologic all I could think is, "this disease can't kill me, but the treatment can." Despite my reservations, I followed her recommendation and injected myself twice a week in the stomach for 6 months, making no other changes. However, Instead of reducing my pain, I just got sick, adding flu-like symptoms to the stomach pain and inflammation raging in my joints. In addition, I still had to use the restroom sometimes upwards of 8 times a day, and other times was bedridden because of the pain. Despite the doctor's assurances that it "should" work, I just continued to get sicker and in more pain. Unfortunately, while biologics may help some, Dr.'s are currently unable to understand or predict why they don't help everyone. So, in desperation I put my knowledge and my access to UC Davis' medical research to work for me.

I began studying about the gene and then the autoimmune disease itself, researching treatments both standard and alternative. I decided to use the subject at hand (myself), as a participant for scientific study and trial. Utilizing my background in holistic medicine through my own private practice, I quit taking the Humira and began trying numerous alternative methods for reduction of symptoms and pain.

Now a little over a year later I can honestly say that 90% of the time I am 85% better. So, what does this mean? It means I no longer wake up with and medicate myself through, pain on a daily basis. I can make plans with loved ones to do things and not have to cancel at the last minute because “I just don’t have the energy”. I can hold conversations with people that don’t have to turn into discussions about my health, because my suffering was so obvious. I work full time in my holistic health care practice once again and can manage my days to deal with the occasional flare up. So how did I do it? I’ve created this article to share my journey and inspire people, in addition to my clients, to heal their bodies themselves!

The first step in finding a cure is to understand how an autoimmune disease works. Generally, all autoimmune diseases have similar components that work together to manifest symptoms in some people, while others can have the gene and never become symptomatic. Dr Alessio Fasano, in his paper titled “Leaky Gut and Autoimmune Diseases” asserts “three pre-existing conditions must all exist together in order for autoimmune diseases to develop.”^{iv} They are:

1. A genetic predisposition to autoimmunity.

As Catherine Guthrie states in “Autoimmune Disorders: When Your Body Turns on You,” over the past 50 years, researchers have made a strong correlation between human leukocyte antigens (HLA for short) and autoimmune disease, which may determine who develops an autoimmune disorder and who does not.^v

Examples are:

Celiac disease, the genes are HLA DQ2/DQ8.

Rheumatoid Arthritis, Type 1 Diabetes and Graves disease: HLA-DRB1, DQA1-DQB1

Multiple Sclerosis is linked with Epstein Barr Syndrome and HLA-C

Hashimoto’s is associated with various HLA genes that differ in populations.

Ankylosing spondylitis is associated with HLA-B27

There are many many more.^{vi}

2. An exposure to an environmental trigger.

It is important to note that only 20-30% of people with a genetic predisposition actually manifest an autoimmune. It depends primarily on the amount of toxins your system is subject to. In short, it is most important to understand that genes determine how sensitive your immune system is to environmental triggers, but do not necessarily mandate it’s effects, or assure that you will be subject to it’s symptoms.

Autoimmune specific examples are:

In Celiac disease, the environmental trigger is gluten.

In Rheumatoid Arthritis and Ankylosing Spondylitis there is a strong correlation between cigarette smoke and the onset of diseases.

Systemic Sclerosis has been associated with occupational exposure to silica dust that arises from crystalline quartz/silica.

Lupus and a disease similar to Scleroderma has been associated with silicone implants. Epstein-Barr Virus may be related to the development of MS and Hashimoto's. Certain metals including mercury have been identified as possible triggers for autoimmune processes.^{vii}

Some toxins alter the structure of our DNA, which can prompt the immune system to see the mutated tissue as a foreign substance and attack. The surge of autoimmunity in the West paralleled the growth of consumer products made from plastics, artificial fibers, and synthetic dyes. Some researchers have posited that the chemicals in personal-care products might be one reason that the majority of autoimmune sufferers are women. According to the Chemical Industry Archives there are over eighty thousand chemicals in common use... less than 5% of the chemicals that are abundant in our environment are tested for human safety.^{viii} In addition, while estrogen's link to certain diseases is not fully known, where the estrogen hormone dominates we see more autoimmune diseases.^{ix}

Environmental triggers that “turn on” these autoimmune-genetic light switches include:

- Pathogens (viruses, bacteria, and other infectious agents)
- Nutritional deficiencies
- Chemical and environmental toxicity
- Endocrine (hormone) imbalance
- Sleep disturbances or deprivation
- Stress^x

3. Increased Intestinal Permeability (Leaky Gut)

“You might be genetically susceptible AND be exposed to a host of environmental triggers, but in most cases you won't develop autoimmunity unless you also have a leaky gut” (Guthrie).^{xi} When there is unintentional openings in the intestine, toxic food particles and waste enter the bloodstream and trigger immune responses which then can trigger an autoimmune response. These gastrointestinal changes can be due to food sensitivities like the gluten from wheat or casein from dairy, or overly processed foods which can strip away nutrients or have unhealthy ingredients. Small intestinal bacterial overgrowth, or SIBO can also lead to a leaky gut which can then cause autoimmune problems throughout the body.^{xii} 80% of the immune system resides in the gut.^{xiii} The gut has more neurotransmitters than the brain, with some neurotransmitters (like Serotonin) being predominately located in the gut.^{xiv}

In addition, stress has many far-reaching effects on your health; one of them is your immune system. Research has found chronic mental stress and/or extreme emotional distress to be a trigger for autoimmune diseases.^{xv} Many people noticed the onset of their health problems during a rough time in their life. Caring for an aging parent, the loss of a loved one or a divorce can be the tipping point for an autoimmune response. In my case, it was being a self-employed Holistic Health practitioner, single mother of a teenage daughter and full time, straight A student at UC Davis.

So, what do you do now? Begin a protocol to reverse autoimmune symptoms by following these steps:

1. Change your diet, by removing leaky gut triggers
2. Repair the gut, through probiotics and supplements
3. Limit toxic load, (ex. no GMO's, NSAID's or mercury fillings)
4. Heal the body as a whole, mind-body-spirit with lifestyle changes to reduce stress and help heal emotional wounds.

Standardized forms of healthcare and pain management (alphabetical)

Diet(s):

What we put in to our mouths is of primary importance and often overlooked. With neurotransmitters and hormones such as androgens manufactured in the gut if we don't get the right foods then we cannot build healthy cells. Food that has toxins or is lacking in nutritional content can break down our intestinal lining and effect our microbiome. The microbiome refers to the millions of healthy bacteria that reside in the gut. Recent research by Dr. Sushrut Jangi at Harvard Medical School has shown that the microbiome is a causative factor in the development of MS.^{xvi}

The diets currently believed to provide the best chance at healing leaky gut and thus minimizing the effects of an autoimmune and/or reversing it are: The Simple Carbohydrate Diet (SCD), The Gut and Psychology Syndrome Diet (GAPS) and/or The Auto Immune Paleo diet (AIP). The common thread between these diets is no grains, flours or refined sugars, and little or no starch. A no starch diet is recommended because certain gut microbes like Klebsiella (which has been linked to the onset of autoimmune disease), depend on dietary starch for their growth. A no starch or low starch diet has been tested and found to decrease inflammation and symptoms.^{xvii} I highly recommend reading the book "Breaking The Vicious Cycle," by Elaine Gottschall, for help in understanding more dietary links to autoimmune diseases and autism.

I can provide in depth information on the above diets by request. *Changing your diet is essential in healing an autoimmune disease*, and is far less daunting than you might at first suspect.

Exercises:

Water exercises/swimming, Tai Chi/Chi Gong, yoga, and walking are all recommended. Light weights and slow jogging can be added once you are not regularly in a "flare" state.

Hormones / Endocrine imbalances:

Especially important for perimenopausal, menopausal and postmenopausal women. I recommend that you see a practitioner who can prescribe bioidentical hormone replacement therapy, after blood or saliva testing.

Over the counter pain medication:

NSAID's must be avoided if at all possible, as they increase intestinal permeability.

Examples:

Aspirin (brand names include Bayer, Bufferin, and Ecotrin, St. Joseph)

Ibuprofen (Advil, Motrin)

Naproxen (Aleve, Anaprox DS, Naprosyn)

Celecoxib (Celebrex)

Prescription pain medication:

Low Dose Naltrexone (LDN) (Dosages from 1.5-5mg. filled at a compounding pharmacy)

Why Use it for Autoimmune Disease?

The immune system is regulated by endorphins which have a primary action on opiate receptors. LDN blocks the Opioid Growth Factor (OGF) for a short period of time which increases the OGF and helps to regulate the immune system. This can not only dramatically reduce pain and inflammation, but has been shown to have many positive benefits in immune diseases including reducing damaging pro-inflammatory cytokines which are produced in the gut. Naltrexone has been shown to decrease DNA methylation; improve the balance of the microbiome and even reverse some of the detrimental effects. This makes treatment of autoimmune diseases with LDN very significant as a proven therapy that potentially reverses some of the epigenetic changes that occur in autoimmune diseases.^{xviii} For further information read: *The LDN Book, How a Little-Known Generic Drug – Low Dose Naltrexone - Could Revolutionize Treatment for Autoimmune Diseases, Cancer, Autism, Depression and More.* Edited by Linda Elsegood or go to www.lowdosenaltrexone.org. There are also a number of studies on the internet that you can find simply by searching for LDN + autoimmune.

Probiotics:

Probiotic use is essential in healing leaky gut. The greater the number of live flora the better in most cases. Autoimmune diseases by and large are only a problem in developed countries.^{xix} Many researchers believe this is because by living in unclean environments (in underdeveloped countries) our immune systems are taxed at an early age and forced to grow stronger. Healthy bacteria is necessary to heal the gut and should be taken on a daily basis. Your safest choice to commence healing is *Lactobacillus acidophilus*. GI Pro “Scdophilus” is great because it’s non-dairy, SCD legal, very high quality, and has a long shelf life. You can find out more here: <http://www.giprohealth.com/scdophilusnext.aspx>.^{xx} Once you start to feel a little better, I highly recommend making your own yogurt (it’s very simple with a machine) as the average store bought probiotic has 10+ billion strains and homemade yogurt can have 100+ billion strains. The SCD diet requires you to make your own yogurt, and has you ferment it for 24 hours to kill any lactose.

Sleep:

Getting adequate sleep and rest is absolutely critical. During rest the body is repairing itself which is absolutely vital to the immune system, and in addition to restoring hormones like serotonin, it helps buffer us from illness.^{xxi} Understanding that your body is using energy to fight itself and therefore will not have as much to draw upon to complete daily tasks, is a troubling but

necessary awareness. The average autoimmune sufferer can require up to 10 hours of sleep a day. Do not skimp on the rest your body needs as it is healing. An excellent article to help you understand the effects of living with an autoimmune is: “The Spoon Theory” written by Christine Miserandino. I recommend you follow the link below or simply search for it on google.^{xxii}

Vitamins & Minerals:

The following are good for gut repair: L-Glutamine (the powder works best) and Betaine HCL with pepsin for gas and acid reflux. In addition, digestive enzymes should be taken with all meals for best results in digestion.

A good multivitamin as well as Fish oil, Vitamin C and D for immune support.

Vitamin D has been shown to be a biological inhibitor of inflammatory hyperactivity.^{xxiii}

Glutathione is the most important antioxidant in the CNS. Levels of glutathione are reduced in patients with MS and other autoimmune diseases, decreasing the brain’s ability to deal with oxidative stress.^{xxiv}

Other suggestions include: Biotin and CoQ10 for their antioxidant properties, and Melatonin for improving sleep, and it’s anti-inflammatory effects.

If after supplementing with the above you are still experiencing fatigue and physical distress, I recommend that you look into Micronutrients Testing, which will show further vitamin & nutrient deficiencies that need to be explained by a professional. Spectracell is a trusted resource.

Alternative forms of healthcare and pain management (alphabetical):

Acupressure/Acupuncture:

Used for over 6,000 years, many patients notice relief from these forms of traditional Chinese medicine as a complement to the above recommendations and an alternative to western medicines which have not helped them. Acupressure helps to balance the body and mind. Because adverse life circumstances almost always coincide with the onset of symptoms, treatments that effect the physiological and the psychological are the most beneficial in my experience. I have used acupressure to minimize the effects of autoimmune diseases for over 16 years, and have seen recovery that has not been achievable through western medical treatments and medications alone.

Aromatherapy:

There are many different types of aromatherapy on the market today that many people find to provide psychological and physiological relief. I recommend trying things like adding lavender oil to the bath and/or a diffuser in your bedroom at night to help relax. Egyptian basil is excellent on the temples for headaches, clove oil for toothaches, and citrus blends work to increase a positive mood affect. Blends like doTerra oils, or Bach’s flower essences are also helpful to many AI sufferers.

Chiropractic Care:

When choosing a chiropractor please be aware of these red flags:

The chiropractor claims to be able to "cure" any condition, or the chiropractor recommends a long-term treatment plan, such as 3 times per week for 6 to 12 months, or the chiropractor

requires a substantial prepayment for treatments.^{xxv}

IMPORTANT: I do not promote “cracking of the neck/joint popping” as a form of manipulation and adjustment. Spinal mobilization methods such as: Activator method, toggle drop and/or cox flexion-distraction are recommended instead, as they are less likely to cause flare ups and result in injuries, especially to the cervical vertebrae.^{xxvi}

Cryotherapy:

Applying ice to inflamed tissue will cause vasoconstriction and help to decrease the diameter of the blood vessels and thereby reduce inflammation. Ice should be applied with a protective covering and never directly on the skin. Apply ice for 15-20 minutes or until numb and then remove it until the tissue has regained normal temperature. Ice and heat can be used alternatively to reduce inflammation and muscle contraction. It is recommended that ice always follow heat, and neither should be slept on.

Hydrotherapy or colon cleansing:

Many people who have been long term meat eaters and suffers of chronic constipation and diarrhea have benefited from colon hydrotherapy. In general a series of 5 treatments is recommended in order to clean out any blockages and/or unhealthy bacteria. “We are exposed To thousands of toxins and chemicals at work and in the home through our air, food, water supply, and through the use of pharmaceutical drugs. In addition we are eating more sugar-rich and processed foods than ever before in human history, and we regularly abuse our bodies with stimulants and sedatives. These toxins and “dead” foods lead to toxic colon build up, and can lead to serious chronic diseases.”^{xxvii}

Massage Therapy:

Often considered a “passive form of exercise” and is an excellent way to detoxify the body. Modalities such as trigger point therapy, myofascial release, craniosacral therapy and reflexology are gentle on the body and when done consistently can provide significant relief from joint and muscle pains. It can also be especially beneficial as a complement to chiropractic care in order to help “set” the adjustments. Some people benefit from regular “Swedish style” massages which are gentler on the body. Others prefer more targeted treatment for areas of significant pain or immobility. Contact me with any questions about any of the other modalities mentioned here and I will be happy to explain each in length.

Meditation:

As mentioned in the beginning, mental and emotional stressors are often the final “trigger” needed to activate the autoimmune disease. Reducing your stress through meditation has proven healing effects. At UCD I studied with a meditation researcher that has published several articles on the ability of meditation to not only decrease depression, but also increase immune health and longevity. There are many meditation “app’s” on the market today that are free to download and will help you begin your practice. The ultimate goal is simply to quiet the mind and ease the spirit. If you have difficulty clearing your thoughts and “monkey-mind” I can help you to find ways to create a meditation practice that is effective for you.

Psychotherapy and/or Holistic Health Coaching:

Many autoimmune sufferers also struggle with the connection between health and mood. My entire practice has been built on the psychology of chronic pain sufferers. I highly recommend that you find a practitioner (such as myself) that helps you to understand how your mental and emotional state can directly affect your physical body, and therefore help you to heal the emotional and mental pain that goes along with the physical. The ability to heal or not to heal your autoimmune can depend a lot on how you “feel”.

Spirituality:

Lastly, I recommend finding a connection to something greater than yourself to help ease you in times of great stress and feelings of overwhelm and undercare. You are not alone out here. Join a meditation group, a religious or spiritual faith center, a spiritual book club, a drum circle, a journeying class or anything else that helps you to feel connected, supported and loved.

From my own experience with my autoimmune disorder I recommend the following mindset:

Release: what you cannot do or change.

Forgive: yourself and others for what you and they haven't done.

Accept: the situation as it is. Without expectations, but with peace.

Please feel free to share this document with anyone who you feel could benefit by this compilation of my research, and if you have any questions or comments, please contact me at:

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ⁱ <https://www.aarda.org/autoimmune-information/autoimmune-statistics/>

ⁱⁱ <https://rheumatoidarthritis.net/treatment/biologics-treatment-options-for-ra/>

ⁱⁱⁱ <http://www.webmd.com/rheumatoid-arthritis/features/new-drugs-for-ra>

^{iv} <https://www.ncbi.nlm.nih.gov/pubmed/22109896>

^v <https://experiencelife.com/article/autoimmune-disorders-when-your-body-turns-on-you/>

^{vi} “The HLA Region and Autoimmune Disease: Associations and Mechanisms of Action” by S.C.L. Gough and M.J Simmonds, <https://www.ncbi.nlm.nih.gov>

^{vii} “Possible Environmental Triggers Associated with Autoimmune Diseases” by George Piligian, <https://www.hss.edu>

^{viii} <http://www.chemicalindustryarchives.org/factfiction/testing.asp>

^{ix} <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3328995/>

^x “The Environmental Factors,” The LDN Book, by Chelsea Green

^{xi} <https://experiencelife.com/article/autoimmune-disorders-when-your-body-turns-on-you/>

^{xii} <https://chriskresser.com/sibo-what-causes-it-and-why-its-so-hard-to-treat/>

- ^{xiii} <http://instituteofhealthsciences.com/probiotics-help-immune-system-in-your-gi-tract/>
- ^{xiv} <http://berkeleysciencereview.com/the-second-brain-the-science-of-the-gut-continues-to-make-good-on-its-promise-to-aid-in-the-understanding-and-treatment-of-mental-disorders-and-beyond/>
- ^{xv} <https://www.ncbi.nlm.nih.gov/pubmed/18190880>
- ^{xvi} The LDN Book, How a Little-Known Generic Drug – Low Dose Naltrexone - Could Revolutionize Treatment for Autoimmune Diseases, Cancer, Autism, Depression and More. Edited by Linda Elsegood
- ^{xvii} <https://www.hindawi.com/journals/jir/2013/872632/>
- ^{xviii} “Morphine Induces Redox-based Changes in Global DNA Methylation and Retrotransposon Transcription by Inhibition of Excitatory Amino Acid Transporter Type 3 – Mediated Cysteine Uptake,” by Molecular Pharmacology 85 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990020/>
- ^{xix} <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3114837/>
- ^{xx} <http://scdlifestyle.com/2011/08/scd-probiotics-what-you-really-need-to-know/>
- ^{xxi} Possible Environmental Triggers, <https://www.hss.edu>
- ^{xxii} <https://butyoudontlooksick.com/articles/written-by-christine/the-spoon-theory/>
- ^{xxiii} Vitamin D and Autoimmunity: New Aetiological and Therapeutic Considerations, by Y. Arnson et al. <https://www.ncbi.nlm.nih.gov/pubmed/17557889>
- ^{xxiv} The LDN Book, How a Little-Known Generic Drug – Low Dose Naltrexone - Could Revolutionize Treatment for Autoimmune Diseases, Cancer, Autism, Depression and More. Edited by Linda Elsegood Multiple Sclerosis and Lupus: by Chelsea Green
- ^{xxv} <http://injuryphysicians.com/3-chiropractic-red-flags/>
- ^{xxvi} <http://www.spine-health.com/treatment/chiropractic/spinal-mobilization-gentle-chiropractic-techniques>
- ^{xxvii} Revitalize Colon Therapy and Wellness Center, by Dejra Turley, www.revitalizecolontherapy.com

Additional autoimmune diseases linked to leaky gut, examples from Dr. Mat Lalonde in “Science of Nutrition”:

Autoimmune Diseases Associated with Leaky Gut

Disease	Tissue/Organ	Citation
1. Allergies	Various	Liu et al. <i>Acta Paediatrica</i> 2005 , 94, 386-93
2. Ankylosing Spondylitis	Skeletal system	Vaile JH et al. <i>J. Rheumatol.</i> 1999 , 26, 128-35
3. Aphthous stomatis	Mouth	Veloso FT et al. <i>Hepatogastroenterol.</i> 1987 , 34, 36-7
4. Asthma	Lungs	Benard A et al. <i>J. Allergy Clin. Immunol.</i> 1996 , 97, 1173-8
5. Autism	Nerve/Brain	White JF. <i>Exp. Bio. Med.</i> 2003 , 228, 639-49
6. Autoimmune gastritis	GI Tract	Greenwood DL et al. <i>Eur. J. Pediatr.</i> 2008 , 167, 917-25
7. Autoimmune hepatitis	Liver	Terjung B. <i>Clin. Rev. Allergy Immunol.</i> 2009 , 36, 40-51
8. Behcet's Syndrome	Small blood vessels	Fresko I et al. <i>Ann. Rheum. Dis.</i> 2001 , 60, 65-6
9. Celiac Disease	Gut	Schulzke JD et al. <i>Pediatric. Res.</i> 1998 , 43, 435-41
10. Chronic Fatigue Synd	Multiple	Maes M et al. <i>Neuroendol. Lett.</i> 2007 , 28, 739-44
11. Crohn's disease	Gut	Caradonna L et al. <i>J. Endotoxin. Res.</i> 2000 , 6, 205-14
12. Depression	Brain	Maes M et al. <i>Neuroendocrinol. Lett.</i> 2008 , 29, 117-24
13. Dermatitis herpetiformis	Skin	Kieffer M et al. <i>Br J. Dermatol.</i> 1983 , 108, 673-8
14. Diabetes, Type 1	Pancreas	Sapone A et al. <i>Diabetes</i> 2006 , 55, 1443-49
15. Eczema	Skin	Hamilton et al. <i>Q. J. Med.</i> 1985 , 56, 559-67
16. Gut migraine children	Gut	Amery WK et al. <i>Cephalalgia</i> 1989 , 9, 227-9

<u>Disease</u>	<u>Tissue/Organ</u>	<u>Citation</u>
17. Hashimoto's Thyroiditis	Thyroid	Sasso FC et al. <i>Gut</i> 2004 , <i>53</i> , 1878-80
18. IgG Nephropathy	Kidney	Rostoker G et al. <i>Nephron</i> . 1993 , <i>63</i> , 286-290.
19. Intrahepatic cholestasis of Liver	Liver	Reyes H et al. <i>Hepatology</i> 2006 , <i>43</i> , 715-2
20. Juvenile Arthritis	Collagen/joints	Picco P et al. <i>Clin. Exp. Rheumatol.</i> 2000 , <i>18</i> , 773-8
21. Lupus erythmatosis	Multiple	Apperloo HZ et al. <i>Epidemiol. Infect.</i> 1994 , <i>112</i> , 367-73
22. Multiple sclerosis	Nerve/Brain	Yacyshyn B et al. <i>Dig. Dis. Sci.</i> 1996 , <i>41</i> , 2493-98
23. Pemphigus	Skin	Kieffer M et al. <i>Br J. Dermatol.</i> 1983 , <i>108</i> , 673-8
24. Primary Biliary Cirrh	Liver	Di Leo V et al. <i>Eur. J. Gastro. Hepatol.</i> 2003 , <i>15</i> , 967-73
25. Psoriasis	Skin	Hamilton et al. <i>Q. J. Med.</i> 1985 , <i>56</i> , 559-67
26. Rheumatoid arthritis	Joints	Smith MD et al. <i>J. Rheumatol.</i> 1985 , <i>12</i> , 299-305
27. Rosacea	Skin	Kendall SN. <i>Exp. Dermatol.</i> 2004 , <i>29</i> , 297-99
28. Schizophrenia	Brain	Wood NC et al. <i>Br. J. Psychiatry</i> 1987 , <i>150</i> , 853-6
29. Scleroderma	Connective tissue	Caserta L et al. <i>Rheumatol. Int.</i> 2003 , <i>23</i> , 226-30
30. Sclerosing Cholangitis	Liver	Terjung B. <i>Clin. Rev. Allergy Immunol.</i> 2009 , <i>36</i> , 40-51
31. Spontaneous abortion	Uterus	Friebe A. <i>Int. J. Biochem. Cell Biol.</i> 2008 , <i>40</i> , 2348-52
32. Ulcerative colitis	Gut	Caradonna L et al. <i>J. Endotoxin Res.</i> 2000 , <i>6</i> , 205-14
33. Urticaria	Skin	Buhner S et al. <i>Allergy</i> 2004 , <i>59</i> , 1118-23
34. Uveitis	Eye	Benitez JM et al. <i>Eye</i> 2000 , <i>14</i> (pt 3A), 340-3