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Research Update: Efficacy of the Autoimmune Protocol for IBD & Hashimoto's Disease

The Autoimmune Protocol in Brief

The Autoimmune Protocol (also known as “Autoimmune Paleo”, “The Paleo Approach”, or “AIP”) is a science-based elimination and reintroduction diet and lifestyle protocol. It focuses on repairing gut health, balancing hormones, and regulating the immune system.

The dietary component includes removing food-driven sources of inflammation and restoring nutrient density, while the lifestyle component includes approaches to sleep, stress management, movement, and connection (both with humans and nature), in order to help best manage autoimmune disease.

https://autoimmunewellness.com/what-is-aip-the-definitive-guide/

Ballantyne, S. (2013). *The Paleo Approach: Reverse Autoimmune Disease and Heal Your Body*. (1. publ. ed.). Las Vegas: Victory Belt Publ.

A Multi-Phase Process

Transition

As the elimination diet is dramatically different than the standard diet most people eat, a period of gradual transition is strongly encouraged. Transition can vary in length from 3 days to as many as 6 weeks.

Elimination

For at least 30 days, the elimination phase is maintained. During this period, the addition of certain nutrient-dense foods is also strongly encouraged.

Reintroduction

The reintroduction period can begin when a person has spent 30-90 days fully compliant with the elimination phase guidelines and has had measurable improvements in their symptoms from their baseline as evidenced from tracking and journaling (and/or lab testing).

Long-term maintenance

Following reintroductions, a person's diet is individualized, sustainable (both practically and socially), and nutrient-dense. It should be the least-restrictive diet that gives them the best health.

https://autoimmunewellness.com/what-is-aip-the-definitive-guide/

FOODS TO INCLUDE

ON THE AUTOIMMUNE PROTOCOL

MEAT

- antelope
- bear
- buffalo (bison)
- boar
- caribou
- cattle (beef, veal)
- deer (venison)
- elk
- goat
- hare
- horse
- kangaroo
- moose
- pig (pork)
- rabbit
- sheep (lamb, mutton)

POULTRY

- chicken
- dove
- duck
- goose
- grouse
- guinea hen
- ostrich
- pheasant
- quail
- turkey

FISH

- anchovy
- arctic char
- bass
- bonito
- carp
- catfish
- cod
- eel
- gar
- haddock
- hake
- halibut
- herring
- marlin
- mackerel
- mahi-mahi
- monkfish
- perch
- pollock
- salmon
- sardine
- snapper
- sole
- swordfish
- tilapia
- trout
- tuna
- turbot
- walleye

LEAFY-VEGETABLES

- arugula
- beet green
- bok choy
- broccoli rabe
- brussels sprout
- cabbage
- carrot top
- celery
- chicory
- collard green
- cress
- dandelion green
- endive
- kale (many varieties)
- lamb's lettuce
- lettuce (many varieties)
- mizuna
- mustard green
- napa cabbage
- radicchio
- sorrel
- spinach
- summer purslane
- swiss chard
- tatsoi
- turnip green
- watercress
- winter purslane

NON-STARCHY VEGETABLES

- artichoke
- asparagus
- broccoli
- caper
- cauliflower
- celery
- fennel
- nopal
- rhubarb (stems only)
- squash blossoms

ALLIUM-FAMILY VEGETABLES

- chive
- garlic
- leek
- onion
- shallot
- scallion
- wild leek (ramp)

SEA VEGETABLES

ROOTS, TUBERS, AND WINTER SQUASH

- Acorn squash
- arrowroot
- bamboo shoot
- beet
- burdock
- butternut squash
- carrot
- cassava
- celeriac
- daikon
- delicata squash
- ginger
- horseradish
- Jerusalem artichoke
- jicama
- kohlrabi
- lotus root
- parsnip
- pumpkin
- radish
- rutabaga
- spaghetti squash
- sweet potato
- taro
- tigernut
- turnip
- wasabi
- water chestnut
- yacon
- yam

VEGETABLE-LIKE FRUITS

- avocado
- bitter melon
- chayote
- cucumber
- okra
- olives
- plantain
- summer squash
- winter melon
- zucchini

BERRIES

- acai
- bilberry
- blackberry
- blueberry
- cranberry
- currant
- elderberry
- gooseberry
- grape
- huckleberry
- lingonberry
- loganberry
- mulberry
- muscadine
- Oregon grape
- raspberry
- salmonberry
- sea buckthorn
- strawberry

ROSACEAE-FAMILY FRUITS

MELONS

- cantaloupe
- honeydew
- horned melon
- melon pear
- Persian melon
- watermelon
- winter melon

CITRUS-FAMILY FRUITS

- blood orange
- Buddha's hand
- clementine
- grapefruit
- kaffir lime
- key lime
- kumquat
- lemon
- lime
- mandarin
- Meyer lemon
- orangelo
- orange
- pomelo
- tangelo
- tangerine
- yuzu

TROPICAL FRUITS

- acerola
- banana
- chayote
- cherimoya
- coconut
- date
- dragonfruit
- durian
- fig
- guava
- jackfruit
- kiwi
- loquat
- lychee
- mango
- mangosteen
- papaya
- passionfruit
- pawpaw
- persimmon
- pineapple
- plantain
- pomegranate
- quince
- rambutan
- star fruit
- tamarind
- vanilla

EDIBLE FUNGI/MUSHROOMS

- chanterelle
- cremini
- morel
- oyster
- porcini
- portobello
- shiitake
- trumpet
- truffle

AUTOIMMUNE**WELLNESS**

Seeking wellness + Building community

ANIMAL FATS

- bacon fat
- lard (rendered pig back fat)
- leaf lard (rendered pig kidney fat)
- pan drippings
- poultry fat
- salo
- schmaltz (chicken or goose fat)
- strutto (clarified pork fat)
- tallow (rendered fat from beef, lamb, or mutton)

PLANT FATS

- avocado oil (cold-pressed)
- coconut oil
- olive oil (cold-pressed)
- palm oil
- palm shortening
- red palm oil

PROBIOTIC FOODS

- fermented meat or fish
- kombucha
- vegetable kvass
- lacto-fermented fruits and vegetables
- non-dairy kefir
- sauerkraut

LEAF, FLOWER, ROOT, AND BARK SPICES

- asafetida
- basil leaf
- bay leaf
- chamomile
- chervil
- chives
- cilantro (coriander leaf)
- cinnamon
- cloves
- curry leaf
- dill weed
- fennel leaf
- garlic
- ginger
- horseradish (root)
- kaffir lime leaf
- lavender
- lemongrass
- mace
- marjoram leaf
- onion powder
- oregano leaf
- parsley
- peppermint
- rosemary
- saffron
- sage
- salt
- savory leaf
- spearmint
- tarragon
- thyme
- truffles
- turmeric
- vanilla

OTHER FLAVORINGS

Note: always check additional ingredients

- anchovies or anchovy paste
- apple cider vinegar
- balsamic vinegar
- capers
- carob powder
- coconut aminos (a soy sauce substitute)
- coconut concentrate
- coconut milk
- coconut water vinegar
- fish sauce
- fruit and vegetable juice (in moderation)
- organic jams and chutneys
- red wine vinegar
- truffle oil (made with olive oil)
- white wine vinegar

SWEETENERS TO INCLUDE IN MODERATION

- coconut sugar
- coconut syrup
- honey
- maple sugar
- maple syrup
- molasses

Note: trace amounts of cane sugar are OK in cured meats and kombucha

FOODS INCLUDED IN MODERATION

- green or black tea
- yerba mate
- fructose (less than 10–20 grams per day)
- omega-6, polyunsaturated fat-rich foods (poultry and industrially raised fatty meat)
- moderate to high glycemic load fruits/vegetables (dried fruit, plantain, taro, etc.), coconut

Download printable lists:
http://autoimmunewellness.com/opt-in

FOODS TO AVOID

ON THE AUTOIMMUNE PROTOCOL

GRAINS AND GLUTEN

- barley
- bulgur
- corn
- durum
- farro
- fonio
- Job's tears
- kamut
- millet
- oats
- rice
- rye
- sorghum
- spelt
- teff
- triticale
- wheat (all varieties, including einkorn and semolina) and all foods derived from these ingredients
- wild rice

PSEUDO-GRAINS AND GRAIN-LIKE SUBSTANCES

- amaranth
- buckwheat
- chia
- quinoa

DAIRY

- butter
- buttermilk
- butter oil
- cheese
- cottage cheese
- cream
- cream cheese
- curds
- dairy-protein isolates
- ghee
- heavy cream
- ice cream
- kefir
- milk
- sour cream
- whey
- whey-protein isolate
- whipping cream
- yogurt

PROCESSED VEGETABLE OILS

- canola oil (rapeseed oil)
- corn oil
- cottonseed oil
- grapeseed oil
- palm kernel oil
- palm olein
- peanut oil
- safflower oil
- sunflower oil
- soybean oil

LEGUMES

- adzuki beans
- black beans
- black-eyed peas
- butter beans
- calico beans
- cannellini beans
- chickpeas (aka garbanzo beans)
- fava beans (aka broad beans)
- Great Northern beans
- green beans
- Italian beans
- kidney beans
- lentils
- lima beans
- mung beans
- navy beans
- pinto beans
- peanuts
- peas
- runner beans
- split peas
- soybeans (including edamame, tofu, tempeh, sprouts, other soy products, and soy isolates like lecithin)

PROCESSED FOOD CHEMICALS AND INGREDIENTS

- acrylamides
- artificial food color
- artificial and natural flavors
- autolyzed protein
- brominated vegetable oil
- emulsifiers (carrageenan, cellulose gum, guar gum, lecithin, xanthan gum)
- hydrolyzed vegetable protein
- monosodium glutamate
- nitrates or nitrites (naturally occurring are okay)
- olestra
- phosphoric acid
- propylene glycol
- textured vegetable protein
- trans fats (partially hydrogenated vegetable oil
- hydrogenated oil)
- yeast extract
- any ingredient with an unrecognized chemical name.

SUGAR ALCOHOLS

- erythritol
- mannitol
- sorbitol
- xylitol

* Naturally occurring sugar alcohols found in whole foods like fruit are OK

NONNUTRITIVE SWEETENERS

- acesulfame potassium
- aspartame
- neotame
- saccharin
- stevia
- sucralose

ADDED SUGARS

- agave
- agave nectar
- barley malt
- barley malt syrup
- beet sugar
- brown rice syrup
- brown sugar
- cane crystals
- cane juice
- cane sugar
- caramel
- corn sweetener
- corn syrup
- corn syrup solids
- crystalline fructose
- date sugar
- dehydrated cane juice
- demerara sugar
- dextrin
- dextrose
- diastatic malt
- evaporated cane juice
- fructose
- fruit juice
- fruit juice concentrate
- galactose
- glucose
- glucose solids
- golden syrup
- high-fructose corn syrup
- invert sugar
- inulin
- jaggery
- lactose
- malt syrup
- maltodextrin
- maltose
- monk fruit (luo han guo)
- muscovado sugar
- palm sugar
- panela
- panocha
- rapadura
- raw cane sugar
- raw sugar
- refined sugar
- rice bran syrup
- rice syrup
- saccharose
- sorghum syrup
- sucanat
- sucrose
- syrup
- treacle
- turbinado sugar
- yacon syrup

NUTS AND NUT OILS

- almonds
- Brazil nuts
- cashews
- chestnuts
- hazelnuts
- macadamia nuts
- pecans
- pine nuts
- pistachios
- walnuts
- any flavors, flours, butters, oils, or other products derived from these nuts

* Coconut is OK because it is not a nut

SEED AND SEED OILS

- chia
- chocolate
- cocoa
- coffee
- flax
- hemp seeds
- poppy
- pumpkin seed
- sesame
- sunflower
- any flavors, butters, oils, and other products derived from these seeds

NIGHTSHADES OR SPICES DERIVED FROM NIGHTSHADES

- ashwagandha
- bell peppers (aka sweet peppers)
- cayenne peppers
- cape gooseberries (ground cherries, not to be confused with regular cherries, which are OK)
- eggplant
- garden huckleberries (not to be confused with regular huckleberries, which are OK)
- goji berries (aka wolfberries)
- hot peppers (chili peppers and chili-based spices)
- naranjillas
- paprika
- pepinos
- pimentos
- potatoes (sweet potatoes are not nightshades and OK)
- tamarillos
- tobacco
- tomatillos
- tomatoes

SPICES DERIVED FROM SEEDS

- allspice
- anise
- annatto
- black caraway (Russian caraway, black cumin)
- cardamom
- celery seed
- coriander
- cumin
- dill seed
- fennel seed
- fenugreek
- juniper
- mustard
- nutmeg
- pepper
- poppy

EGGS

- chicken eggs
- duck eggs
- goose eggs
- quail eggs
- any other type of egg

ALCOHOL

- beer
- liquor
- wine
- any other form of alcoholic beverage (small amounts in kombucha is OK)

The Four Lifestyle Aspects of AIP

There are four areas of overall lifestyle that should also be addressed:

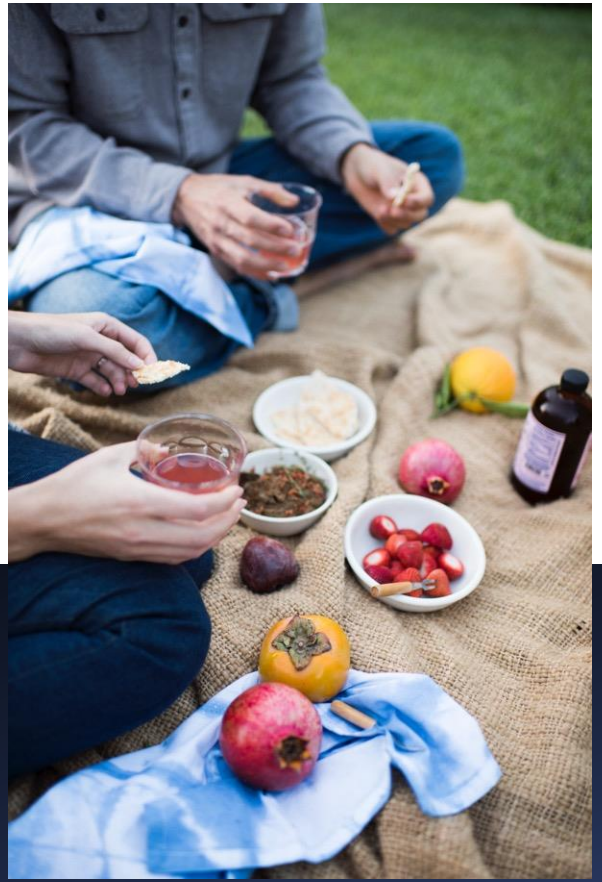
1. Sleep
2. Stress management
3. Movement
4. Connection (To others and nature)

Just like with the dietary aspect of AIP, focusing on these four areas was not just a random guess. **Through careful evaluation of the scientific literature these areas were pinpointed as having significant impacts on regulation of the immune system, hormonal balance, and/or the healing process itself.**

Those with autoimmune diseases are particularly vulnerable to imbalance in these areas and learning how to approach each can have as great an effect, if not greater, than dietary changes on restoring health and well-being. Emphasizing both diet and lifestyle is typically a powerful combination, improving the quality of life baseline for almost everyone.

https://autoimmunewellness.com/what-is-aip-the-definitive-guide/

How Do We Know AIP Works?



AIP Hashimoto's Study

Cureus

Open Access Original Article

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Efficacy of the Autoimmune Protocol Diet as Part of a Multi-disciplinary, Supported Lifestyle Intervention for Hashimoto's Thyroiditis

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Disclosures can be found in Additional Information at the end of the article

Abstract

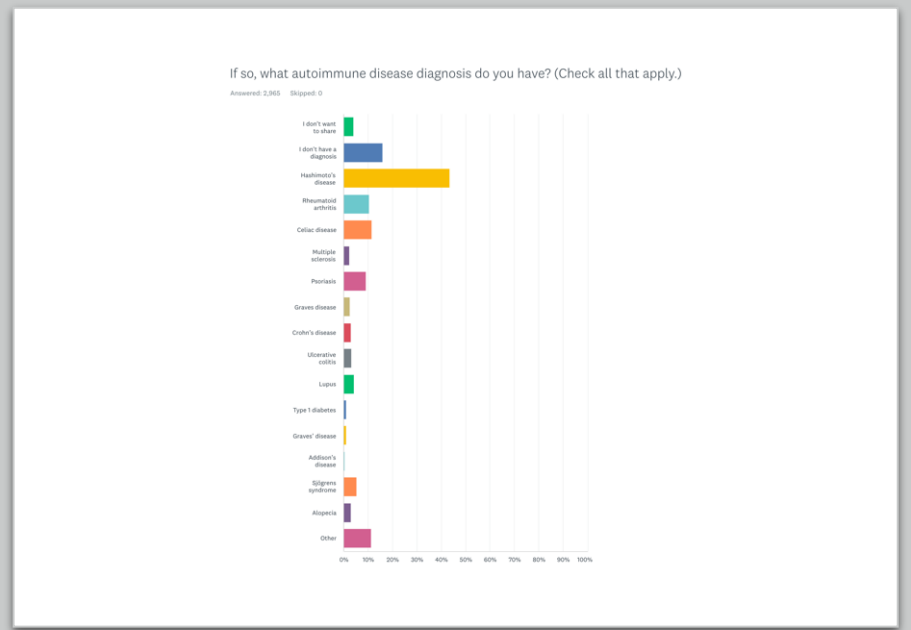
Background

Hashimoto's thyroiditis (HT), also known as chronic lymphocytic thyroiditis, is an autoimmune disorder affecting the thyroid gland and is the most common cause of hypothyroidism in the US. Despite medical management with thyroid hormone replacement, many individuals with HT continue to experience symptoms and impaired quality of life. Given the limited number of efficacious treatments outside of hormone replacement and the overall burden of continued symptomatic disease, this pilot study was designed to determine the efficacy of a multi-disciplinary diet and lifestyle intervention for improving the quality of life,clinical symptom burden, and thyroid function in a population of middle-aged women with HT.

Abbott, R. D., Sadowski, A., & Alt, A. G. (2019). Efficacy of the autoimmune protocol diet as part of a multi- disciplinary,

Why Study Hashimoto's?

- Prevalence in the AIP community
- In our clinical experience Hashimoto's is less straightforward than some other AI conditions and we were curious to see if AIP had a quantifiable effect



ANSWER CHOICES	RESPONSES	
I don't want to share	4.15%	123
I don't have a diagnosis	15.99%	474
Hashimoto's disease	43.54%	1,291
Rheumatoid arthritis	10.35%	307
Celiac disease	11.47%	340
Multiple sclerosis	2.43%	72
Psoriasis	9.27%	275
Graves disease	2.66%	79
Crohn's disease	2.93%	87
Ulcerative colitis	3.24%	96
Lupus	4.28%	127
Type 1 diabetes	1.08%	32
Graves' disease	1.11%	33
Addison's disease	0.51%	15
Sjögrens syndrome	5.36%	159
Alopecia	2.90%	86
Other	11.30%	335
Total Respondents: 2,965		

Comments (978)

Study Design

Design: Single arm pilot study

Population: Women between the ages of 20-45 with Hashimoto's thyroiditis

Intervention:

- Group health coaching
- Personalized functional medicine care

Duration: 12 weeks

- 2 week washout period for initial testing
- 6 weeks of transition to AIP
- 4 weeks of maintenance in AIP elimination phase

Abbott, R. D., Sadowski, A., & Alt, A. G. (2019). Efficacy of the autoimmune protocol diet as part of a multi- disciplinary,

Study Measures

Primary Outcome:

- Quality of Life: Short Form-36 (SF-36) Health Related Quality of Life (HRQL)

Secondary Outcomes:

- Clinical Symptom Burden: Medical Symptoms Questionnaire (MSQ)
- Thyroid Function: TSH, Free and Total T4, T3
- Thyroid Antibodies: Anti-thyroidperoxidase (TPO), anti-thyroglobulin antibodies (TGA)
- Immune Function: White blood cell (WBC) count, differential cell count (neutrophils, lymphocytes, eosinophils, monocytes)
- Inflammation: High-sensitivity C-reactive protein (hs-CRP)

Abbott, Sadowski, & Alt (2019)

Exclusion Criteria

- Another active AI disease
- No definitive diagnosis of HT
- 18.4 > BMI > 29.9
- Pregnant, breastfeeding, < 6 months postpartum
- Organ failure of any kind (ex. chronic kidney disease, heart failure)
- Non-FDA-approved thyroid replacement medication (compounded)
- Unable to complete a two-week washout period

Abbott, Sadowski, & Alt (2019)

Baseline & Completion Testing

Labs

- CBC with differential and platelet count
- Comprehensive metabolic profile (CMP)
- Thyroid function tests
- Thyroid antibodies
- 25-OH vitamin D

Questionnaires

- SF-36
- MSQ
- Qualitative survey
- Food frequency questionnaire

Exploratory Specialized Labs

- Genova Diagnostics NutrEval Organic Acid Testing
- Genova Diagnostics Comprehensive Stool Analysis x1

Abbott, Sadowski, & Alt (2019)

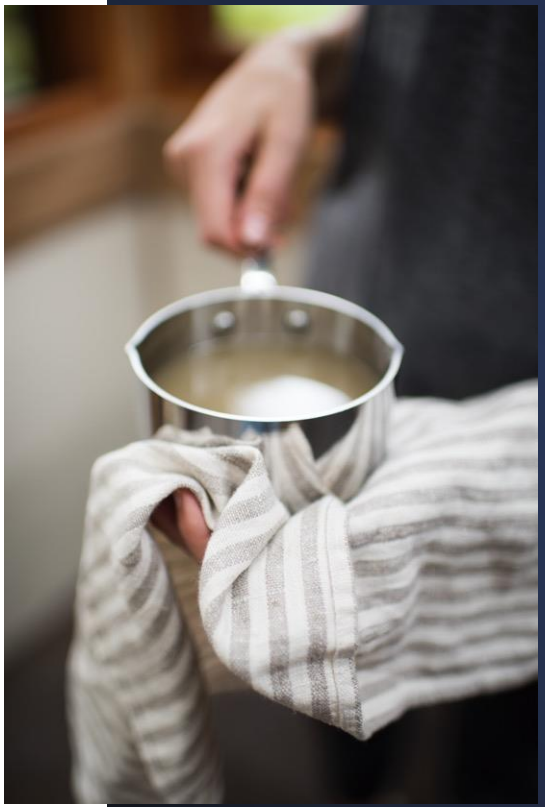
The Intervention

10-week intervention

- 6-week phased transition to AIP
- 4-week maintenance phase (full-compliance AIP)

Transition phase details:

- Standard American Diet to Autoimmune Protocol in Six Weeks
- Gentle, phased eliminations of potential triggers
- Introduction to nutrient-dense foods
- Introduction to lifestyle practices (sleep, stress-management, movement, connection)
- Community support
- Virtual health coaching



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Primary Results - HRQL

	SF-36 Physical Functioning	SF-36 Physical Role Functioning	SF-36 Emotional Role Functioning	SF-36 Vitality	SF-36 Mental Health	SF-36 Social Role Functioning	SF-36 Bodily Pain	SF-36 General Health
N	16	16	16	16	16	16	16	16
Median (IQR) Pre	80 (29)	25 (88)	33 (92)	23 (19)	54 (25)	63 (22)	68 (22)	40 (26)
Median (IQR) Post	95 (10)	100 (50)	78 (19)	58 (34)	78 (19)	81 (22)	78 (21)	70 (35)
Median of Differences (IQR)	10 (10)	50 (75)	41 (67)	33 (29)	22 (12)	19 (37)	23 (32)	28 (21)
P	0.0001*	0.001*	0.0063*	<0.0001*	<0.0001*	0.0057*	0.0112*	<0.0001*

Table 2: SF-36 paired t-tests results and statistics
SF-36 (36-Item Short Form Health Survey), Pre (pre-intervention), Post (post-intervention), N (sample size), IQR (inter-quartile range), P (p value), (*) denotes statistically significant p value

Abbott, Sadowski, & Alt (2019)

Primary Results - HRQL

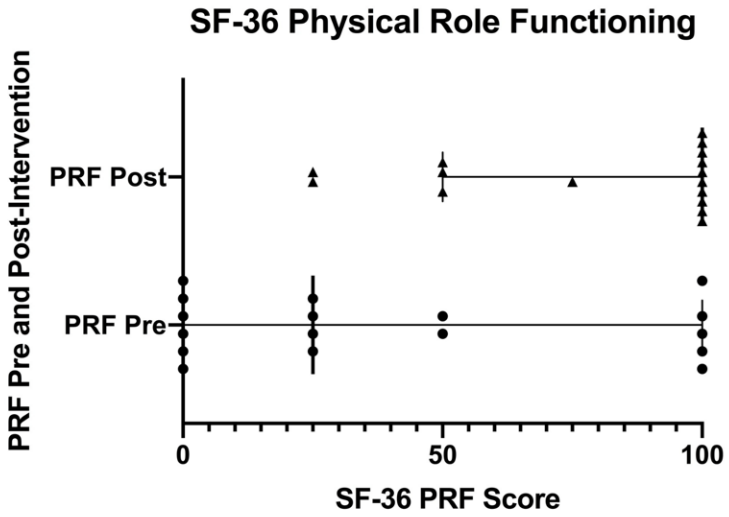

Figure 1: SF-36 physical role functioning scores pre- and post-intervention
SF-36 (36-Item Short Form Health Survey), PRF (physical role functioning), Pre (pre-intervention), Post (post-intervention)

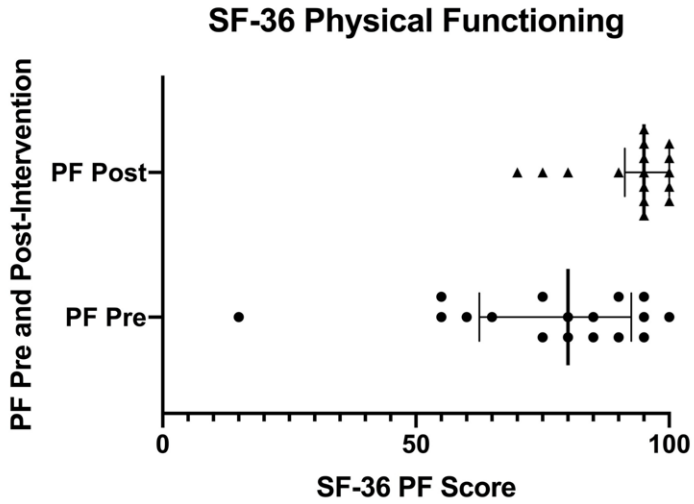

Figure 2: SF-36 physical functioning scores pre- and post-intervention
SF-36 (36-Item Short Form Health Survey), PF (physical functioning), Pre (pre-intervention), Post (post-intervention)

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Primary Results - HRQL

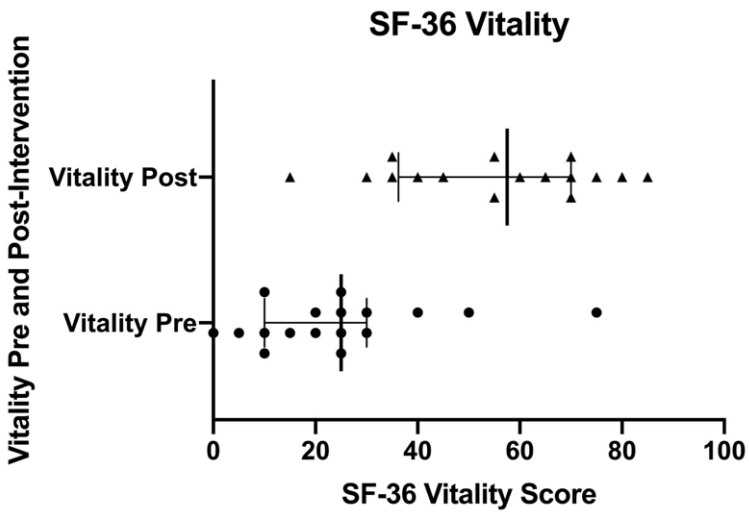

Figure 3: SF-36 vitality scores pre- and post-intervention
SF-36 (36-Item Short Form Health Survey), Pre (pre-intervention), Post (post-intervention)

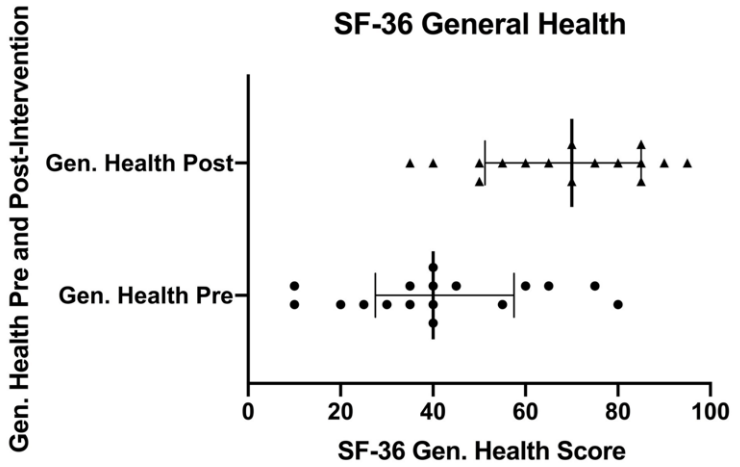

Figure 4: SF-36 general health scores pre- and post-intervention
SF-36 (36-Item Short Form Health Survey), Gen. Health (general health), Pre (pre-intervention), Post (post-intervention)

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Primary Results – Symptom Burden

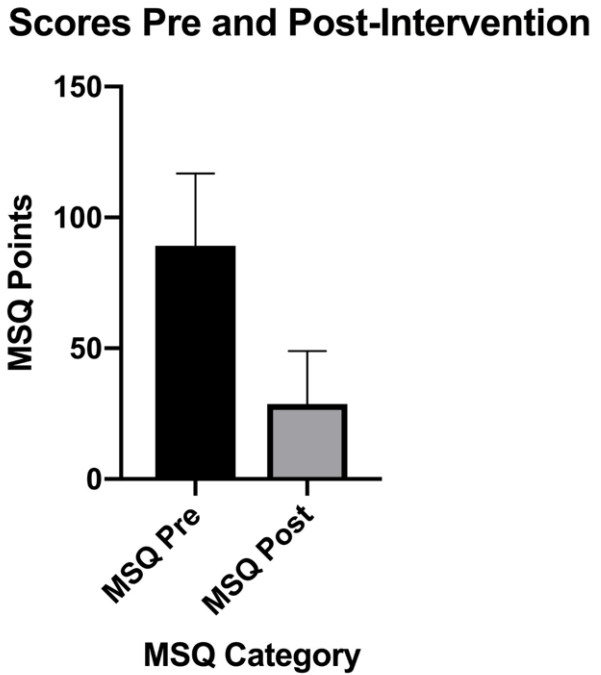

Figure 5: MSQ scores pre-intervention to post-intervention
MSQ (Medical Symptoms Questionnaire), Pre (pre-intervention), Post (post-intervention), SD (standard deviation), error bars indicate SD

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Primary Results – Thyroid Function

	TSH (µIU/mL)	Total T3 (ng/dL)	Free T3 (pg/mL)	Reverse T3 (ng/dL)	Total T4 (µg/dL)	Free T4 (ng/dL)	TPO (IU/mL)	TGA (IU/mL)
N	12	12	12	12	12	12	14	14
Mean (SD) pre	2.02(1.46)	97.3(18.0)	2.4(0.6)	17.4(4.3)	7.0(1.1)	1.3(0.4)	225(178)	110(261)
Mean (SD) post	1.98(1.44)	89.0(9.0)	2.4(0.5)	19.1 (5.3)	7.1(1.4)	1.4(0.4)	219(186)	124(293)
t	0.075	1.668	0.1515	1.9717	0.5932	0.841	0.7703	1.4292
P	0.942	0.124	0.882	0.0743	0.565	0.418	0.455	0.176
g	0.029	0.584	0.029	0.355	0.124	0.099	0.035	0.0532

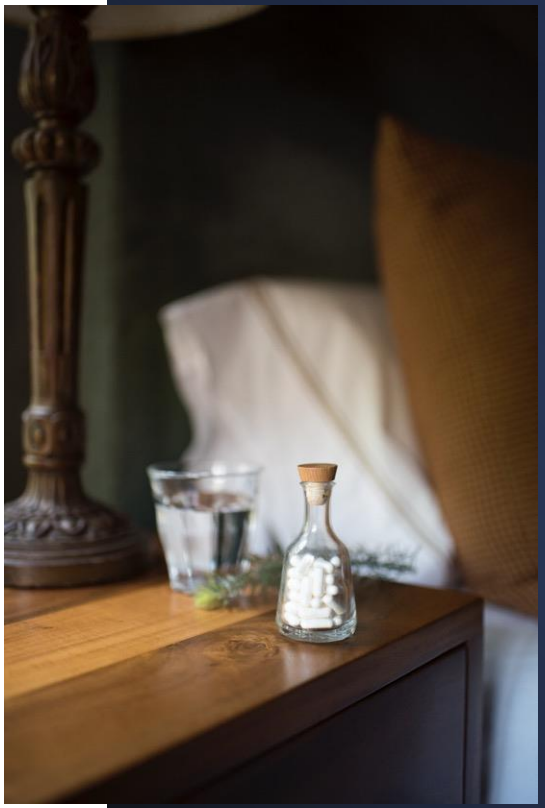
Table 3: Thyroid hormone and antibody values pre- and post-intervention with paired t-test statistics
TPO (thyroid peroxidase antibodies), TGA (anti-thyroglobulin antibodies), pre (pre-intervention), post (post-intervention), N (sample size), SD (standard deviation), t (t-test statistic), P (p-value), g (Hedges' g)

Abbott, Sadowski, & Alt (2019)

Results – Medications

Medication Changes:

- 2/13 women decreased medication after initial testing
- 6/13 women decreased medication by study end
- 1 woman switched from T4/T3 to T4 only medication at study end
- 3/3 women not on medication did not start replacement by study end



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Key Takeaways

The results of the AIP Hashimoto's study as well as our clinical experience working with Hashimoto's clients reveals some important insights:

1. The AIP, consisting of dietary intervention, lifestyle factors, and personalized functional medicine care has the potential to improve QoL and symptoms in middle-aged women with Hashimoto's.
2. The impact of lifestyle factors (attention to sleep, stress-management, movement, and connection) can't be teased out, but likely contribute to the improvements seen in QoL and symptoms and are under-appreciated in therapy.
3. The researchers concluded that improved thyroid hormone efficacy and increased nutrient availability were likely mechanisms for observed improvements in thyroid function that lead to a trend for less medication needed by study end.

Abbott, R. D., Sadowski, A., & Alt, A. G. (2019). Efficacy of the autoimmune protocol diet as part of a multi-disciplinary, supported lifestyle intervention for hashimoto's thyroiditis. *Cureus, 11*(4), e4556. doi:10.7759/cureus.4556

AIP IBD Studies

Inflamm Bowel Dis. 2017 Nov; 23(11): 2054–2060.
Published online 2017 Aug 29.
doi: 10.1097/MIB.0000000000001221

PMCID: PMC5647120
NIHMSID: NIHMS889275
PMID: 28858071

Efficacy of the Autoimmune Protocol Diet for Inflammatory Bowel Disease

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Abstract

Go to:

Introduction:

Data suggest dietary modification can improve clinical responses in inflammatory bowel disease (IBD). The goal of this study was to determine the efficacy of an autoimmune protocol diet in patients with Crohn's disease and ulcerative colitis.

Konijeti, G. G., Kim, N., Lewis, J. D., Groven, S., Chandrasekaran, A., Grandhe, S., . . . Torkamani, A. (2017). Efficacy of the autoimmune protocol diet for inflammatory bowel disease. *Inflammatory Bowel Diseases, 23*(11), 2054-2060.

Why Study IBD?

- Inflammatory Bowel Disease (Ulcerative Colitis & Crohn's Disease) are among the 12 most common autoimmune diseases, with up to 1 in every 264 people having UC and up to 1 in every 444 people having Crohn's.
- We were approached with the opportunity to participate in this research by Dr. Gauree Konijeti, a gastroenterologist and head of Scripps Clinic Inflammatory Bowel Disease Program, after her UC patient went into remission using AIP.
- In our clinical experience IBD can be easier to quickly manage with AIP as compared to other autoimmune diseases.
- The conventional medical community is becoming more open to dietary change being effective in gastrointestinal diseases.

Study Design

Design

- Single arm pilot study

Population

- Men and Women with active UC or Crohn's, mean disease duration of 19 years
- Recruitment through Scripps Clinic

Intervention

- Group health coaching.
- Office visits (at baseline before study start, and end of study) and laboratories (baseline, week 6, and week 11) were conducted at Scripps Clinic. Endoscopy, radiology, and/or biomarker assessment were performed at baseline and at study completion to assess for mucosal healing.

Duration: 11 Weeks

- 6 weeks of slow transition
- 4 weeks of maintenance in AIP elimination phase
- 1 week testing completion

Konijeti et al. (2017)

Study Measures

- Primary Outcome
  - Clinical remission for CD and UC at study completion (11 weeks), defined as HBI < 5 for CD and partial Mayo score (sum of individual scores for stool frequency, rectal bleeding, and physician global assessment) ≤2 for UC.
- Secondary Outcome
  - Achievement of clinical outcome measures at week 6 (end of transition phase), changes in biomarkers and endoscopic disease activity from baseline to weeks 6 and 11, changes in steroid use (among those with active use at baseline), and examination of any adverse events during the follow-up period.

Konijeti et al. (2017)

TABLE 1.

Characteristics of Study Participants

	CD (n = 9)	UC (n = 6)	Total Cohort (n = 15)
Age (yr), mean (SD)	45 (22)	41 (15)	44 (19)
Female, n (%)	7 (78)	4 (67)	11 (73)
IBD duration (yr), mean (SD)	21.4 (15.0)	15.3 (14.6)	19.0 (14.6)
IBD location	Ileal (n = 4)	Rectum (n = 1)	n/a
	Colonic (n = 2)	Left side (n = 2)	
	Ileocolonic (n = 2)	Pancolitis (n = 3)	
	Ileocolonic w/perianal disease (n = 1)		
Tobacco use			
Never, n (%)	5 (56)	6 (100)	11 (73)
Current, n (%)	0 (0)	0 (0)	0 (0)
Former, n (%)	4 (44)	0 (0)	4 (27)
IBD medication use			
Mesalamine, n (%)	2 (22)	5 (83)	7 (47)
Immunomodulator, n (%)	2 (22)	0 (0)	2 (13)
Biological, n (%)	6 (67)	1 (17)	7 (47)
Systemic steroid, n (%)	1 (11)	2 (33)	3 (20)
FC (μg/g), mean (range)	404 (0–1269)	376 (25–1177)	392 (0–1269)
CRP (mg/L), mean (SD)	7.6 (13.0)	6.7 (6.9)	7.3 (10.7)

Konijeti et al. (2017)

Results

- Clinical remission was achieved at week 6 by 11/15 (73%) study participants (6 CD and 5 UC), and all 11 maintained clinical remission during the maintenance phase of the study.
- Mean total SIBDQ scores significantly improved from 46.5 (SD 12.5) at baseline to 53.3 (SD 10.9) at week 6 (P = 0.017) and 60.5 (SD 4.8) at week 11 (P = 0.045).
    - The Short Inflammatory Bowel Disease Questionnaire (SIBDQ) is a health-related quality of life (HRQoL) tool measuring physical, social, and emotional status (score 10-70, poor to good HRQoL).

Konijeti et al. (2017)

TABLE 2.

Effect of AIP Diet on Clinical IBD Activity

	Week 0	Week 6	*P* (week 6 versus 0)	Week 11	*P* (week 11 versus 0)
CD (n = 7 respondents at weeks 0, 6 and 11)					
HBI, mean (SD)	6.7 (1.5)	3.3 (1.8)	0.001	3.4 (2.6)	0.004
Abdominal pain, mean (SD)	0.6 (0.5)	0.4 (0.5)	0.604	0.6 (0.8)	1
Bowel movement frequency, mean (SD)	3.4 (2.2)	2.4 (0.8)	0.156	2.4 (1.3)	0.134
General well-being, mean (SD)	1.6 (0.5)	0.3 (0.8)	0.022	0.3 (0.8)	0.022
Complications, mean (SD)	1.1 (1.1)	0.1 (0.4)	0.018	0.4 (0.8)	0.14
UC (n = 6 respondents at weeks 0, 6 and 11)					
Partial Mayo score, mean (SD)	5.8 (1.2)	1.2 (2.0)	0.01	1.0 (2.0)	0.007
Stool frequency, mean (SD)	2.0 (0.9)	0.2 (0.4)	0.012	0.2 (0.4)	0.012
Rectal bleeding, mean (SD)	1.8 (0.8)	0.5 (0.8)	0.025	0.3 (0.8)	0.017
Physician global assessment, mean (SD)	2.0 (0)	0.5 (0.8)	0.007	0.5 (0.8)	0.007

TABLE 3.

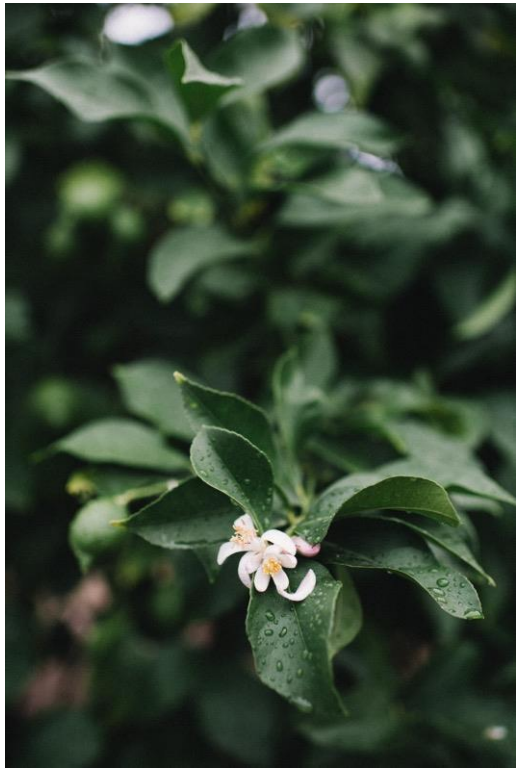
Effect of AIP Diet on Fecal and Serum IBD Biomarkers

Week 0 versus 6 Results	n	Week 0	Week 6	*P*
FC (μg/g), mean (SD)	8	267 (367)	157 (251)	0.45
Baseline FC >50 μg/g, mean (SD)	5	412 (406)	196 (317)	0.36
CRP (mg/L), mean (SD)	11	8.3 (11.5)	7.0 (14.5)	0.46
Albumin (g/dL), mean (SD)	11	3.9 (0.4)	3.9 (0.4)	0.82
Week 0 versus 11 Results	**n**	**Week 0**	**Week 11**	***P***
FC (μg/g), mean (SD)	6	471 (562)	112 (104)	0.12
Baseline FC >50 μg/g, mean (SD)	4	701 (563)	139 (113)	0.09
CRP (mg/L), mean (SD)	9	3.9 (5.2)	3.4 (5.3)	0.82
Albumin (g/dL), mean (SD)	10	4.1 (0.4)	3.9 (0.4)	0.36

Konijeti et al. (2017)

Medications

- Patients were advised to make no medication changes before study start.
- 1 participant discontinued oral mesalamine therapy but achieved clinical remission by week 6 (partial Mayo clinic score decreased from 6 at baseline to 0 at week 6).
- Another participant self-discontinued oral mesalamine but continued mesalamine suppository, and also noted a decrease in partial Mayo score from 5 to 0 by week 6.
- Two of the 3 participants discontinued steroid therapy (in both, partial Mayo clinic score decreased to 0 by week 6).



Konijeti et al. (2017)

AIP & Intestinal RNA Expression

The Autoimmune Protocol Diet Modifies Intestinal RNA Expression in Inflammatory Bowel Disease

Anita Chandrasekaran, MD, MPH, Bhuvan Molparia, PhD, Ehsaan Akhtar, MD, Xiaoyun Wang, MS, James D Lewis, MD, MSCE, John T Chang, MD, PhD, Glenn Oliveira, BS, Ali Torkamani, PhD, Gauree Gupta Konijeti, MD, MPH

Crohn's & Colitis 360, Volume 1, Issue 3, October 2019, otz016,
https://doi.org/10.1093/crocol/otz016
Published: 12 July 2019 **Article history** ▾

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Issue Section: Communications

Lay Summary

Researchers from the Scripps Clinic in La Jolla, CA recently looked at gene expression to better understand the role that diet plays in inflammatory bowel disease. Their findings suggest that diet may help modify inflammatory pathways in people with ulcerative colitis.

Chandrasekaran, A., Molparia, B., Akhtar, E., Wang, X., Lewis, J. D., Chang, J. T., . . . Konijeti, G. G. (2019). The autoimmune protocol diet modifies intestinal RNA expression in inflammatory bowel disease. *Crohn's & Colitis 360, 1*(3), otz016.

Results

“On average, the RNA-seq from the UC participants resulted in ~6.6 million uniquely aligning reads per sample. Differential expression analysis of this data resulted in a total of 324 significant differentially regulated genes, out of which 167 were downregulated and 157 upregulated post-AIP dietary intervention.”

The analysis of the differentially expressed genes indicated transcriptional changes associated with:

- downregulation of inflammatory T-cell-mediated responses
- increased regulatory T-cell responses and function
- upregulation of transcriptional pathways associated with the inflammatory response and mucosal healing (including protein synthesis, fatty acid synthesis, and DNA repair)

Chandrasekaran et al. (2019)

Possible Mechanisms of Healing with Dietary Changes?

This was the first study ever correlating changes in mucosal RNA expression during dietary therapy of any kind in patients with active UC.

Chandrasekaran et al. (2019)

AIP & IBD Quality of Life

OBSERVATIONS AND RESEARCH

An Autoimmune Protocol Diet Improves Patient-Reported Quality of Life in Inflammatory Bowel Disease

Anita Chandrasekaran, MD, MPH,[,a] Shauna Groven, BS,[†,a] James D. Lewis, MD, MSCE,[‡] Susan S. Levy, PhD,[†] Caroline Diamant, MD,[*] Emily Singh, MD,[*] and Gauree Gupta Konijeti, MD, MPH[*,§]*

Background: Prior studies suggest dietary modification may improve clinical response or remission rates in patients with inflammatory bowel disease (IBD). Our aim was to examine whether an autoimmune protocol diet improves quality of life in patients with active Crohn disease (CD) and ulcerative colitis (UC).

Methods: We conducted an uncontrolled clinical trial of the autoimmune protocol diet in adult patients with active IBD (Harvey–Bradshaw Index ≥ 5 for CD or partial Mayo score ≥ 3 for UC, and erosions/ulcers on endoscopy and/or elevated fecal calprotectin). The dietary intervention consisted of a 6-week elimination phase, followed by a 5-week maintenance phase. Short Inflammatory Bowel Disease Questionnaire (SIBDQ) was completed at baseline, and weeks 3, 6, 9, and 11.

Results: The final cohort included 6 UC and 9 CD participants. Mean SIBDQ score improved significantly from baseline (46.5) to weeks 3 (54.0, $P = 0.02$), 6 (53.3, $P = 0.02$), 9 (62.0, $P = 0.03$), and 11 (60.5, $P = 0.05$). Among participants completing all 5 surveys, mean SIBDQ increased from 46.5 to 61.5 by week 11 ($P = 0.03$). By week 3, participants experienced significant improvements in bowel movement frequency (36%, $P = 0.04$), stress (28%, $P = 0.01$), and ability to perform leisure/sport activities (29%, $P = 0.02$). Effects were not significantly different between CD and UC participants.

Conclusions: Dietary modification can improve quality of life as early as week 3 in patients with active IBD. Larger randomized controlled trials are needed to examine dietary interventions in IBD.

Key Words: autoimmune protocol, Crohn disease, diet, inflammatory bowel disease, quality of life, ulcerative colitis

Chandrasekaran, A., Groven, S., Lewis, J. D., Levy, S. S., Diamant, C., Singh, E., & Konijeti, G. G. (2019). An autoimmune protocol diet improves patient-reported quality of life in inflammatory bowel disease. *Crohn's & Colitis 360, 1*(3), otz019.

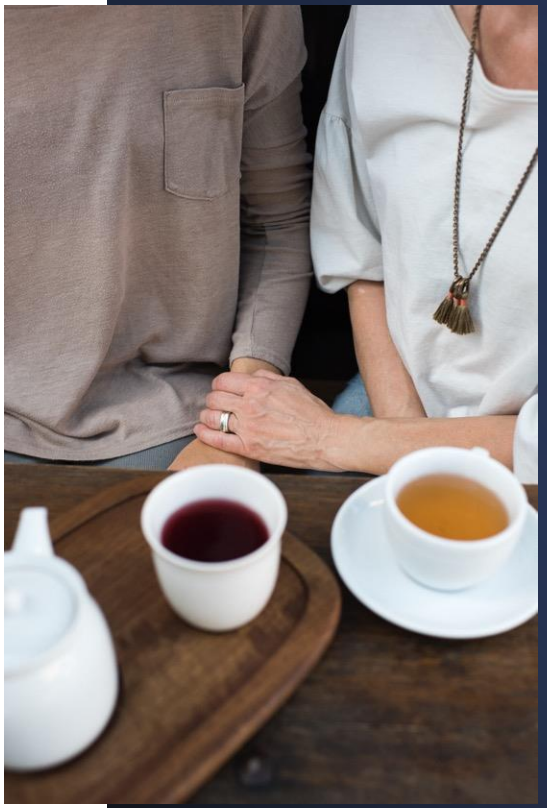
Results

- Among participants completing all 5 surveys, mean SIBDQ increased from 46.5 to 61.5 by week 11.
- As early as week 3, participants experienced significant improvements in bowel movement frequency, stress, and ability to perform leisure/sport activities.
- Overall adherence rate to AIP was 73.3% at week 6.

These results confirm what we observe in our clinical practices with IBD clients:

- AIP significantly improves their quality of life
- AIP often has a positive impact on their quality of life in short time frame
- AIP is sustainable for them

This is very meaningful, because a high quality of life is often elusive for those with autoimmune disease, so much so that it's not uncommon for our healthcare providers to tell us we "have to learn to live this way." That is a demoralizing message and these results show there are other options.



Chandrasekaran, A., Groven, S., Lewis, J. D., Levy, S. S., Diamant, C., Singh, E., & Konijeti, G. G. (2019). An autoimmune protocol diet improves patient-reported quality of life in inflammatory bowel disease. *Crohn's & Colitis 360, 1*(3), otz019. doi:10.1093/crocol/otz019

Key Takeaways

The results of the AIP IBD studies as well as our clinical experience working with clients with Crohn's and ulcerative colitis reveals some important insights:

- The combination of AIP and medication (with medical supervision) may be the right path to quick relief for some IBD clients where medication alone was not producing results.
- We must be aware of the potential for bowel obstruction in IBD clients, especially those with Crohn's and known strictures. Proactively modifying the AIP elimination phase and communicating frequently and clearly about how foods should be prepared is crucial for these clients.
- While a full understanding is still emerging, sharing the message that "genes are not your destiny" with hopeless autoimmune clients is empowering. We can help restore a sense of agency in their health journey by explaining that it is actually gene *expression,* which can be influenced through diet and lifestyle changes, like AIP, that matters.

The Reintroduction Phase

There are no gold stars for the longest, most perfect AIP elimination phase. The goal is to eventually arrive at the *least-restrictive diet* that promotes the *individual's best health*. This is achieved through the reintroduction process.

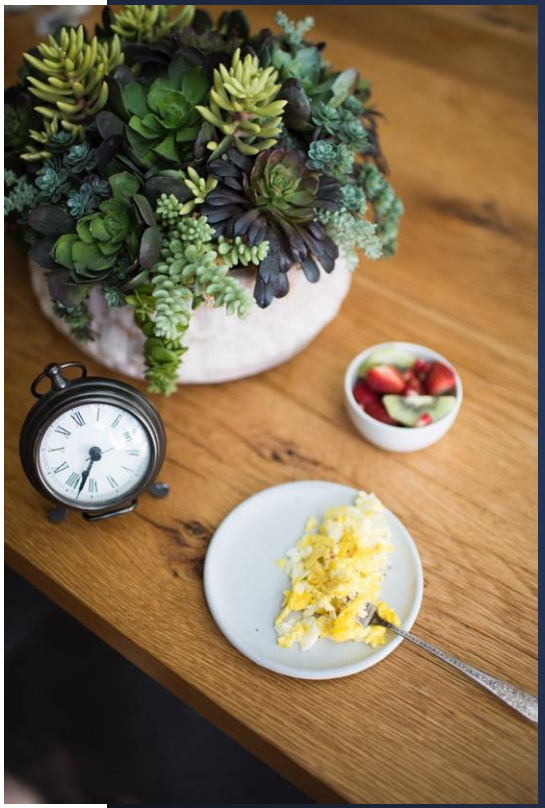
A client is working toward personalization through:

- identifying which foods are causing symptoms,
- expanding their diet to include foods that are most supportive,
- and eliminating more long-term the foods that undermine their health.

Some of the elimination foods are valuable to re-incorporate into their diet:

- from a nutrient standpoint (eggs, for example)
- from a practical and social sustainability standpoint (i.e. it's easier to travel if you can eat rice and it's nice to occasionally go out to Happy Hour with friends)
- for the psychological benefit (rather than allowing food-driven fears to take hold)

https://autoimmunewellness.com/how-to-reintroduce-food-on-aip-the-definitive-guide/



https://autoimmunewellness.com/how-to-reintroduce-food-on-aip-the-definitive-guide/

When to Start Reintroductions?

A client is ready to start the reintroduction process when the following has been achieved:

- 30-90 days fully compliant in the elimination phase
- Measurable improvement in symptoms from baseline as evidenced from tracking and journaling (and/or lab testing)

REINTRODUCTION STAGES

The best use of this chart is in conjunction with detailed, step-by-step instructions for conducting your food reintroductions. You can find those instructions in our article: How To Reintroduce Food on AIP: The Definitive Guide.

STAGE 1

EGG YOLKS
** not the whites*

- chicken
- duck
- goose
- quail
- any other type of egg yolk

LEGUMES
** beans with edible pods, and legume sprouts*

- green beans
- peas
- runner beans
- snow peas
- sugar snap peas

FRUIT AND BERRY-BASED SPICES

- allspice
- star anise
- caraway
- cardamom pod
- juniper
- pepper (from black, green, pink, or white peppercorns)
- sumac

SEED-BASED SPICES

- anise seed
- annatto seed
- black caraway (Russian caraway, black cumin)
- celery seed
- coriander seed
- cumin seed
- dill seed
- fennel seed
- fenugreek
- mustard
- nutmeg

NUT AND SEED OILS

- macadamia
- sesame
- walnut

NUTS AND SEEDS

- chocolate
- cocoa
- coffee (occasional basis)

DAIRY
** ideally from grass-fed sources*

- ghee

STAGE 2

NUTS AND SEEDS
** whole, flours, and butters excluding cashews and pistachios*

- almonds
- brazil nuts
- cashews
- chestnuts
- chia
- coffee (daily basis)
- flax
- hazelnuts
- hemp seeds
- macadamia nuts
- pecans
- pine nuts
- pistachios
- poppy
- pumpkin seed
- sesame
- sunflower
- walnuts
- any other flavors, flours, butters, oils, and other products derived from nuts and seeds

EGG WHITES
** or whole eggs*

- chicken
- duck
- goose
- quail
- any other type of egg white

DAIRY
** ideally from grass-fed sources*

- butter
- butter oil

ALCOHOL
** small quantities*

- gluten-free beer or hard cider (8 oz. or less)
- wine (5 oz. or less)
- fortified wine (3 oz. or less)
- liqueur (3 oz. or less)
- gluten-free spirits (1 oz. or less)

STAGE 3

NIGHTSHADES
** limited*

- bell peppers (aka sweet peppers)
- eggplant
- paprika
- potatoes (peeled)

DAIRY
** ideally from grass-fed sources*

- buttermilk
- cheese
- cottage cheese
- cream
- cream cheese
- curds
- dairy-protein isolates
- heavy cream
- ice cream
- kefir
- milk
- sour cream
- whey
- whey-protein isolate
- whipping cream
- yogurt

LEGUMES

- chickpeas (aka garbanzo beans)
- lentils
- split peas

Note: Legumes may be more well-tolerated when soaked and fermented

STAGE 4

NIGHTSHADES OR SPICES DERIVED FROM NIGHTSHADES
** whole, flours, and butters excluding cashews and pistachios*

- ashwagandha
- cayenne peppers
- cape gooseberries (aka ground cherries)
- garden huckleberries
- goji berries (aka wolfberries)
- hot peppers (chili peppers and chili-based spices)
- naranjillas
- pepinos
- pimentos
- potatoes (unpeeled)
- tamarillos
- tomatillos
- tomatoes

GLUTEN-FREE GRAINS, PSEUDO-GRAINS, AND OTHER GRAIN-LIKE SUBSTANCES
** or whole eggs*

- amaranth
- buckwheat
- corn
- fonio
- Job's tears
- kamut
- millet
- oats
- rice
- sorghum
- spelt
- teff
- wild rice
- quinoa

Note: Grains may be more well-tolerated when soaked and fermented

LEGUMES

- adzuki beans
- black beans
- black-eyed peas
- butter beans
- calico beans
- cannellini beans
- fava beans (aka broad beans)
- Great Northern beans
- Italian beans
- kidney beans
- lima beans
- mung beans
- navy beans
- pinto beans
- peanuts

Note: Legumes may be more well-tolerated when soaked and fermented

ALCOHOL
** moderate quantities*

- gluten-free beer or hard cider
- wine
- fortified wine
- liqueur
- gluten-free spirits

AUTOIMMUNEWELLNESS
Seeking wellness + Building community

The Research: What Do We Know About Reintroductions?

Clinical Course and Dietary Patterns Among Patients Incorporating the Autoimmune Protocol for Management of Inflammatory Bowel Disease (P12-010-19)

Joy Lee, Christian Pedretti, Gauree Konijeti

Current Developments in Nutrition, Volume 3, Issue Supplement_1, June 2019, nzz035.P12-010-19, https://doi.org/10.1093/cdn/nzz035.P12-010-19
Published: 13 June 2019

A correction has been published: *Current Developments in Nutrition*, Volume 3, Issue 10, October 2019, nzz118, https://doi.org/10.1093/cdn/nzz118

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Abstract

Objectives

The aim was to examine the clinical course and dietary patterns among patients incorporating autoimmune protocol (AIP) for management of inflammatory bowel disease (IBD).

Lee, J., Pedretti, C., & Konijeti, G.*Clinical course and dietary patterns among patients incorporating the autoimmune protocol*

Results

A total of 78 people submitted online surveys. They had a mean age of 39.4 years and a mean IBD duration 13.2 years. A large majority had used steroids and 35% were on immunosuppressive drugs when they completed the survey.

Results:

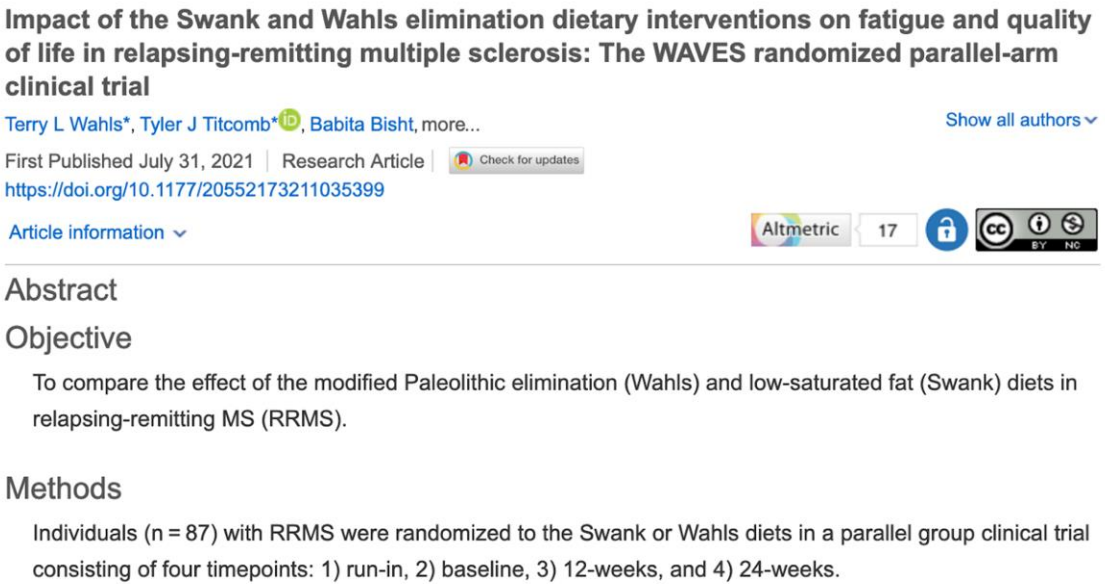
- 73% of respondents reported achieving clinical remission after implementing AIP.
- 32% of respondents reported discontinuing steroids after implementing AIP.
- A majority of respondents reported reintroducing foods between 5 weeks and 1 year of implementing AIP, with only 12% reporting needing more than 1 year in the elimination phase.
- Respondents reported the most common unsuccessful reintroductions as gluten (58%), processed foods (52%), nightshades (46%), dairy (42%), and non-gluten grains (29%).

Table 1. Frequency of Food Groups Reintroduced by Patients after Starting AIP

Food group category	Able to Reintroduce	Unable to Reintroduce
Dairy, n (%)	24 (30.77)	33 (42.31)
Nightshades, n (%)	24 (30.77)	36 (46.75)
Fruit, n (%)	49 (62.82)	3 (3.85)
Processed foods, n (%)	4 (5.13)	41 (52.56)
Grains, n (%)		
Non-gluten, n (%)	30 (38.46)	23 (29.49)
Gluten, n (%)	2 (2.56)	46 (58.97)

Lee, Pedretti, & Konijeti (2019)

Further Research Incorporating Reintroductions



Impact of the Swank and Wahls elimination dietary interventions on fatigue and quality of life in relapsing-remitting multiple sclerosis: The WAVES randomized parallel-arm clinical trial

Terry L Wahls*, Tyler J Titcomb*, Babita Bisht, more...

Show all authors

First Published July 31, 2021 | Research Article | Check for updates

https://doi.org/10.1177/20552173211035399

Article information

Altmetric 17

Abstract

Objective

To compare the effect of the modified Paleolithic elimination (Wahls) and low-saturated fat (Swank) diets in relapsing-remitting MS (RRMS).

Methods

Individuals (n = 87) with RRMS were randomized to the Swank or Wahls diets in a parallel group clinical trial consisting of four timepoints: 1) run-in, 2) baseline, 3) 12-weeks, and 4) 24-weeks.

Wahls, T. L., Titcomb, T. J., Bisht, B., Eyck, P. T., Rubenstein, L. M., Carr, L. J., . . . Snetselaar, L. G. (2021). Impact of the swank and wahls elimination dietary interventions on fatigue and quality of life in relapsing-remitting multiple sclerosis: The WAVES randomized parallel-arm clinical trial. *Multiple Sclerosis Journal - Experimental, Translational and Clinical, 7*(3), 20552173211035399. doi:10.1177/20552173211035399

What Does Successful Reintroduction Look Like?

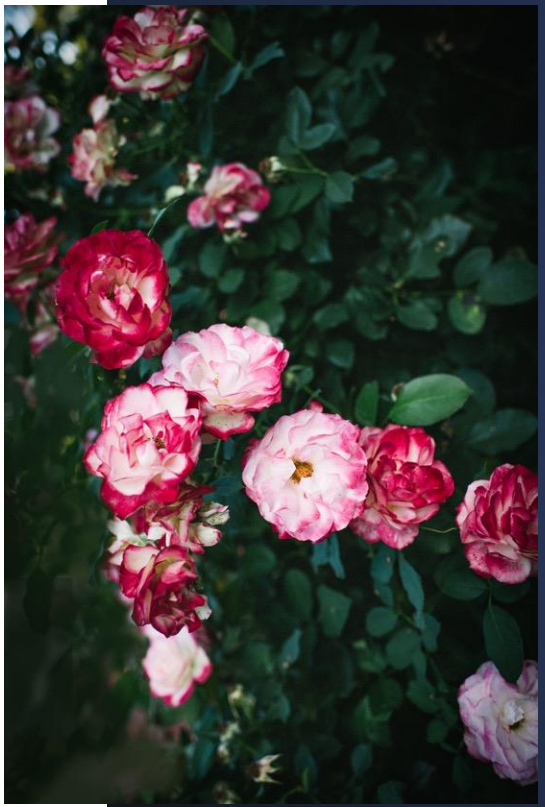
- The client identifies which foods are causing them symptoms.
- The client is able to expand their diet to include foods that are most supportive of their best health and eliminate long-term the foods that undermine their best health.
- The client ends up with a diet that is individualized, sustainable (both practically, socially, & psychologically), and nutrient-dense.
- The process is nuanced, individual, and, in the presence of autoimmune disease, has ebbs and flows.

https://autoimmunewellness.com/how-to-reintroduce-food-on-aip-the-definitive-guide/

What's Next?

AIP Psoriasis/Eczema Study

- In 2019, we conducted a third AIP efficacy study with microbiome researcher, Lucy Mailing. Results of this study have been delayed due to pandemic-related back-ups in the lab setting, but we are hopeful to see publication soon.
- In our clinical experience, skin-related autoimmune diseases take more time to resolve utilizing AIP as a management tool and are significantly impacted by lifestyle factors, like stress.
- Anecdotally, a few of the study participants have reached out post-study sharing their successes and eager to find out if the study results will confirm their individual experiences.



What's Next?

Rheumatoid Arthritis

- A research team in New Zealand conducted an observational study using AIP in RA patients in 2021 and is awaiting publication.
- An additional AIP efficacy study on RA using the same model as the IBD, Hashimoto's, and psoriasis studies will be started in the near future.
- RA is the third most common diagnosis in our community, impacting 10% of them, so there is a lot of interest in supporting this research.

Cross-sectional Study on AIP

- We are also eagerly awaiting publication of a cross-sectional study on AIP for a variety of diseases by PA students at the University of Alabama.

References

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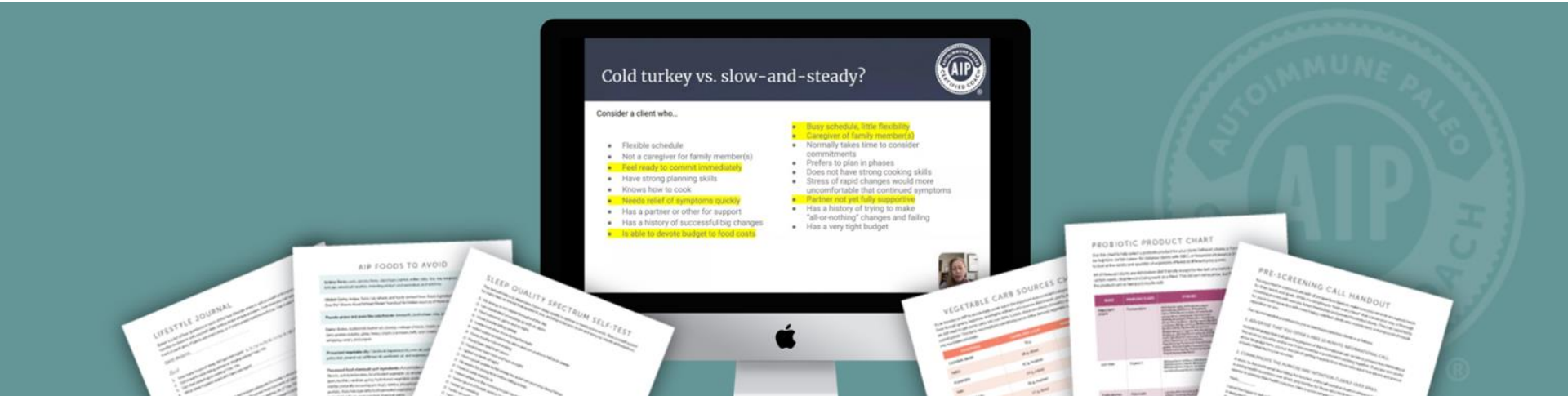

TIME FOR QUESTIONS!

Research Update: Efficacy of the Autoimmune Protocol for IBD & Hashimoto's Disease

Mickey Trescott & Jaime Hartman

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