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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.





FOODS TO AVOID

ON THE AUTOIMMUNE PROTOCOL

GRAINS AND GLUTEN

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

PSEUDO-GRAINS AND GRAIN-LIKE SUBSTANCES

amaranth	chia
buckwheat	quinoa

DAIRY

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

PROCESSED VEGETABLE OILS

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

LEGUMES

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

PROCESSED FOOD CHEMICALS AND INGREDIENTS

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

SUGAR ALCOHOLS

erythritol	sorbitol	* Naturally occurring sugar alcohols found in whole foods like fruit are OK
mannitol	xylitol	

NONNUTRITIVE SWEETENERS

acesulfame potassium	neotame	stevia
aspartame	saccharin	sucralose

ADDED SUGARS

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

NUTS AND NUT OILS

almonds	macadamia nuts	any flavors, flours, butters, oils, or other products derived from these nuts
Brazil nuts	pecans	
cashews	pine nuts	* Coconut is OK because it is not a nut
chestnuts	pistachios	
hazelnuts	walnuts	

SEED AND SEED OILS

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

NIGHTSHADES OR SPICES DERIVED FROM NIGHTSHADES

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

SPICES DERIVED FROM SEEDS

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

EGGS

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

ALCOHOL

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



FOODS TO INCLUDE

ON THE AUTOIMMUNE PROTOCOL

MEAT

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

POULTRY

chicken	goose	quail
dove	guinea hen	turkey
duck	ostrich	
goose	pheasant	

FISH

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

LEAFY-VEGETABLES

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

NON-STARCHY VEGETABLES

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

ALLIUM-FAMILY VEGETABLES

chive	onion	wild leek (ramp)
garlic	shallot	
leek	scallion	

SEA VEGETABLES

ROOTS, TUBERS, AND WINTER SQUASH

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

VEGETABLE-LIKE FRUITS

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

BERRIES

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

ROSACEAE-FAMILY FRUITS

MELONS

cantaloupe	melon pear	winter melon
honeydew	Persian melon	
horned melon	watermelon	

CITRUS-FAMILY FRUITS

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

TROPICAL FRUITS

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

EDIBLE FUNGI/MUSHROOMS

chanterelle	oyster	shitake
cremini	porcini	trumpet
morel	portobello	truffle

ANIMAL FATS

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

PLANT FATS

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

PROBIOTIC FOODS

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

LEAF, FLOWER, ROOT, AND BARK SPICES

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

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	maple sugar	<i>Note: trace amounts of cane sugar are OK in cured meats and kombucha</i>
coconut syrup	maple syrup	
honey	molasses	

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>



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.

How Do We Know AIP Works?



AIP Hashimoto's Study

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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.

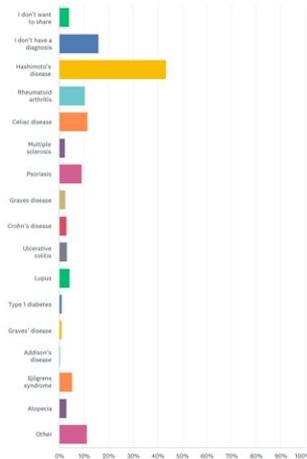


Why Study Hashimoto's?

- 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

If so, what autoimmune disease diagnosis do you have? (Check all that apply.)

Answered: 2,965 Skipped: 0



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

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)

- Another active AI disease
- No definitive diagnosis of HT
- $18.4 > \text{BMI} > 29.9$
- 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)

Exclusion Criteria



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

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



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

Primary Results - HRQL

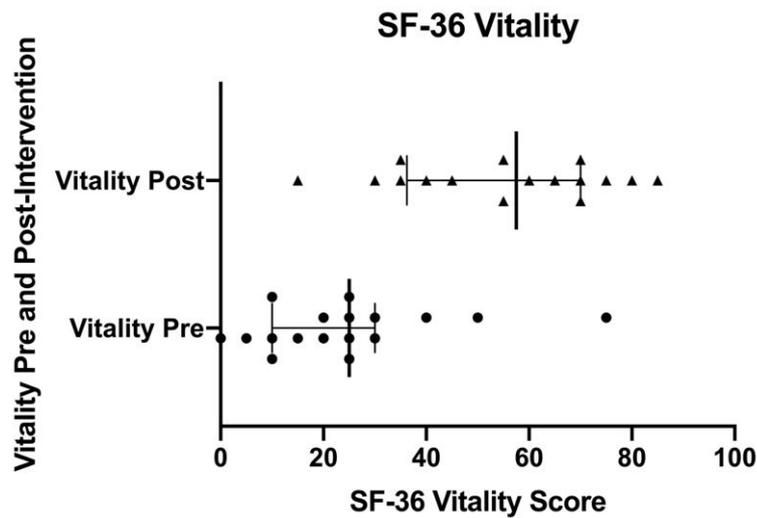


Figure 3: SF-36 vitality scores pre- and post-intervention
SF-36 (36-Item Short Form Health Survey), Pre (pre-intervention), Post (post-intervention)

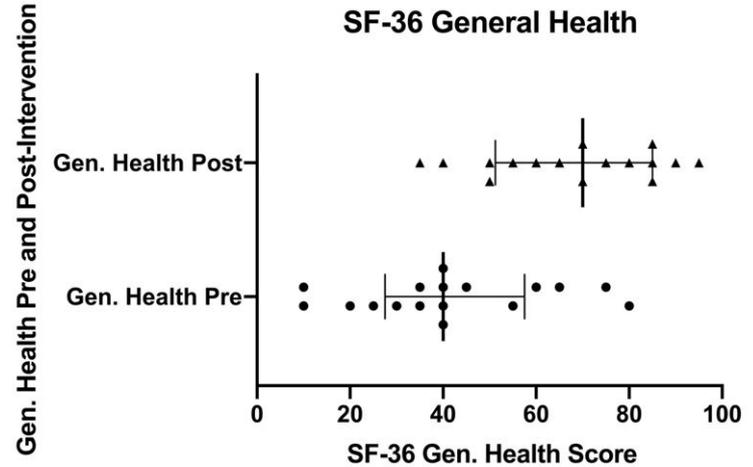


Figure 4: SF-36 general health scores pre- and post-intervention
SF-36 (36-Item Short Form Health Survey), Gen. Health (general health), Pre (pre-intervention), Post (post-intervention)

Primary Results – Symptom Burden

MSQ Scores Pre and Post-Intervention

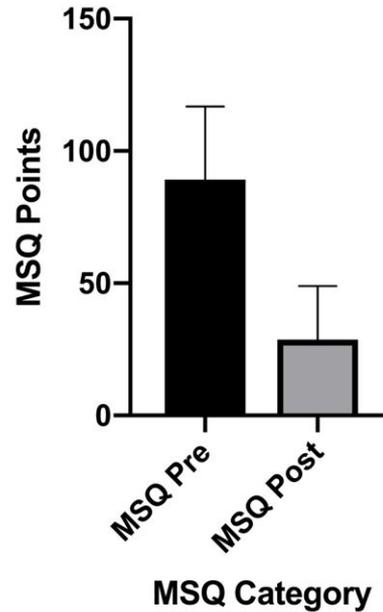


Figure 5: MSQ scores pre-intervention to post-intervention
MSQ (Medical Symptoms Questionnaire), Pre (pre-intervention), Post (post-intervention), SD (standard deviation), error bars indicate SD

Primary Results – Thyroid Function

	TSH (μ IU/mL)	Total T3 (ng/dL)	Free T3 (pg/mL)	Reverse T3 (ng/dL)	Total T4 (μ g/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)

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



Key Takeaways

In terms of how we practice with Hashimoto's clients, and what we teach other practitioners about utilizing AIP with their Hashimoto's clients, this study provided important insights.

1. Multifaceted dietary and lifestyle interventions including the AIP elimination phase, online group health coaching, and personalized functional medicine care has the potential to improve QOL and symptoms in middle-aged women with Hashimoto's.
2. While the effect of community engagement can't be specifically teased out, it likely contributed to improvements seen in QOL and symptoms and may be an under-appreciated tool for management.
3. Weight loss, 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.

AIP IBD Studies

[Inflamm Bowel Dis](#), 2017 Nov; 23(11): 2054–2060.

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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. doi:10.1097/MIB.0000000000001221

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

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.

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) Colonic (n = 2) Ileocolonic (n = 2) Ileocolonic w/perianal disease (n = 1)	Rectum (n = 1) Left side (n = 2) Pancolitis (n = 3)	n/a
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 ($\mu\text{g/g}$), 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)

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).



TABLE 2.

Effect of AIP Diet on Clinical IBD Activity

	Week 0	Week 6	<i>P</i> (week 6 versus 0)	Week 11	<i>P</i> (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

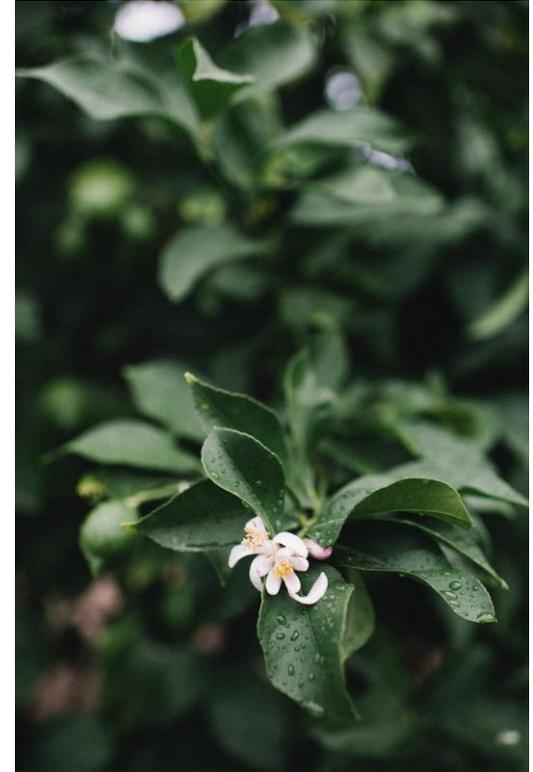
TABLE 3.

Effect of AIP Diet on Fecal and Serum IBD Biomarkers

Week 0 versus 6 Results	n	Week 0	Week 6	<i>P</i>
FC ($\mu\text{g/g}$), mean (SD)	8	267 (367)	157 (251)	0.45
Baseline FC >50 $\mu\text{g/g}$, 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	<i>P</i>
FC ($\mu\text{g/g}$), mean (SD)	6	471 (562)	112 (104)	0.12
Baseline FC >50 $\mu\text{g/g}$, 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

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).





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.

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)

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.



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^{*,e}

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

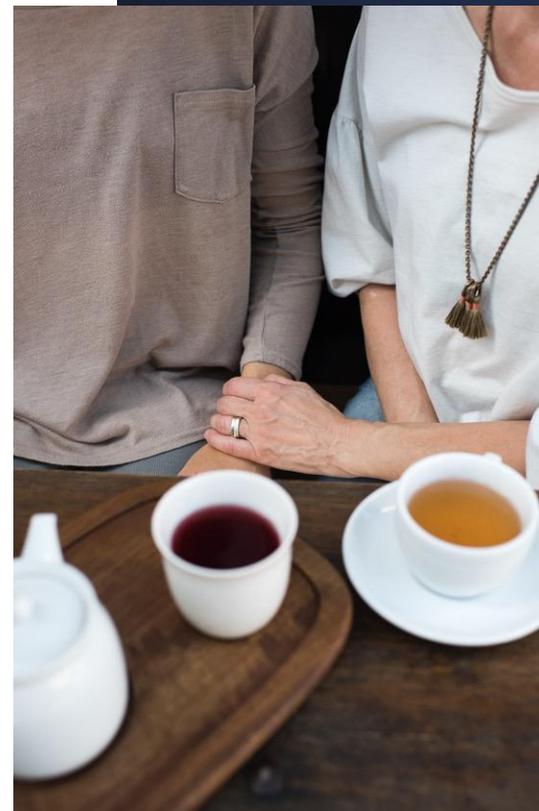
Results

- 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.



Key Takeaways

In terms of how we practice with IBD clients and what we teach other practitioners about utilizing AIP with their IBD clients, the original AIP IBD study and the following sub-studies provided important insights.

- AIP and medication 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)





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
walnut

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

ALCOHOL

** small quantities*

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*

butter
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

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>

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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).

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)

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*^{id}, Babita Bisht, more...

[Show all authors](#) ▾

First Published July 31, 2021 | Research Article |



<https://doi.org/10.1177/20552173211035399>

[Article information](#) ▾



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.



What Does Successful Reintroduction Look Like?

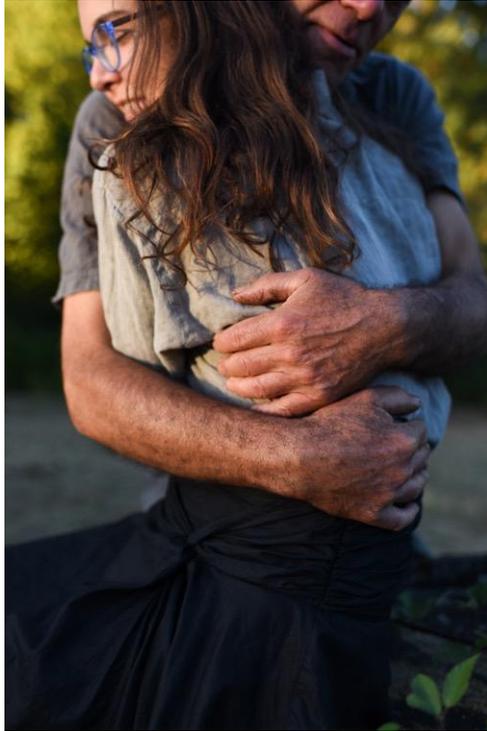
- The client identifies which foods are causing them symptoms.
- The client is able to expand their diet to include foods that are most supportive of their best health and eliminate long-term the foods that undermine their best health.
- The client ends up with a diet that is individualized, sustainable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

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

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

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

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

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. doi:10.1093/crocol/otz016

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. doi:10.1097/MIB.0000000000001221

Lee, J., Pedretti, C., & Konijeti, G. *Clinical course and dietary patterns among patients incorporating the autoimmune protocol for management of inflammatory bowel disease* (P12-010-19)

Trescott, M., & Alt, A. (2016). *The Autoimmune Wellness Handbook: A DIY Guide to Living Well with Chronic Illness*. Emmaus: Rodale Inc.

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

Images: Mickey Trescott, Charlotte Dupont



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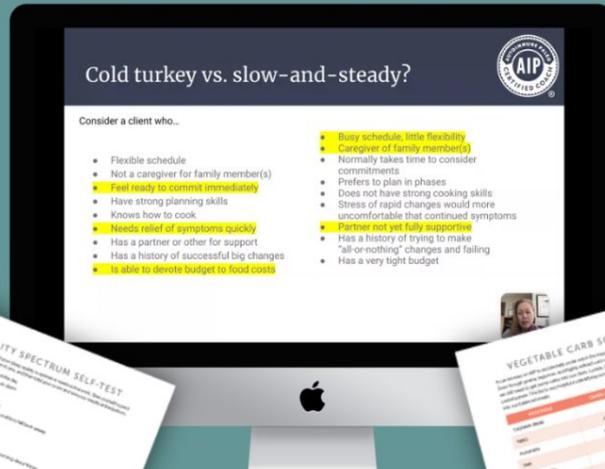
Practitioner Training Program



If you'd like to join us for the next enrollment of AIP Certified Coach, we will be running the program again in fall 2023.

Interest list: <http://autoimmunewellness.com/practitioners>

Coach directory for referral: <http://aipcertified.com/coach-directory>



TIME FOR QUESTIONS!

