

## **Treatment Plan for Hayley Ray**

**Date :** 16.09.24



**Patient Health Priorities :** Improve energy levels, Support general health and wellbeing, Reduce thyroid antibodies, reduce cholesterol

### **Timeline :**

#### *Short term*

- Improve energy levels / reduce fatigue through herbal medicine and lifestyle strategies
- Reduce cholesterol levels through dietary strategies
- Reduce the risk of worsening bowel and bladder prolapse by improving constipation through dietary strategies and thyroid support
- Reduce period symptoms of pain, clotting and heavy flow through herbal medicine and dietary strategies
- Reduce lower back pain by lowering inflammation through herbal medicine and dietary strategies
- Support thyroid hormone production and conversions

#### *Long Term*

- Improve nervous system function to support stress adaptation
- Optimise cardiovascular health, nerve health and reduce inflammation to improve lower back pain
- Support immune and thyroid health to reduce thyroid antibody levels
- Support gastrointestinal microbiome to improve iron absorption
- Improve metabolic health

**Follow Up appointment :** follow up appointment at 12 weeks – 1st week of December

## Nutrition Overview for HAYLEY RAY

Date : 16.09.24



Include the following foods...		Target
* EER		8200kj/day
<b>Protein</b>	<p><b>Optimal sources</b> - poultry (chicken, turkey, duck), seafood, eggs</p> <p><b>Plant sources</b> - quinoa, chickpeas, lentils, nuts, seeds, peas, beans, tempeh, hemp seeds, hemp protein powder</p> <p><b>Limit</b> - dairy, red meat, processed meats (bacon, sausages, deli meats)</p> <p><b>Avoid</b> - soy protein</p>	25-30g per meal
<b>Fibre</b>	<p><b>Soluble fibre</b> - fruit and vegetables, barley, seed husks, flaxseed, psyllium, oat bran, legumes (lentils, peas, dried beans, soy)</p> <p><b>Insoluble fibre</b> - wheat bran, corn, rive, skins and fruit and vegetables, dried teas, nuts, seeds, wholegrain foods</p> <p><b>Resistant starch</b> - unripe banana, lentils, unprocessed cereals and grains, cooked and cooled potato and rice</p>	25g/day
<b>Water</b>		2L/day
<b>Essential Fatty Acids</b>	<p>Fatty fish - salmon, mackerel, anchovies, sardines, herring</p> <p>flaxseed/linseed, chia seeds, walnuts</p>	2-3 serves (150g) of fish per week
<b>Iron</b>	<p><b>Haem iron sources</b> : meat (beef, lamb, pork, kangaroo), poultry (chicken, turkey, eggs), seafood (salmon, sardines, tuna) and organ meats (liver, kidney, pate)</p> <p><b>Non-haem sources</b> : legumes (mixed beans, lentils, chickpeas), dark green leafy vegetables (spinach, silver beet, broccoli), tofu, nuts, seeds, dried fruit, wholemeal pasta and bread</p>	18mg/day
<b>Folate</b>	Dark green leafy vegetables, legumes, rice, avocado, beef liver	400µg/day
<b>Zinc</b>	Oysters, beef (steak), pumpkin seeds (pepitas), crab, cheddar cheese	8mg/day
<b>Vitamin A</b>	eggs, liver (pate), butter, cod liver oil, cod, salmon, green leafy vegetables, apricots, pumpkin, sweet potato, carrots	700µg/day

Eliminate or limit the following foods...	
<b>Saturated Fat</b>	Reduce – Fried foods, dairy products, coconut oil, butter, takeaway foods, bakery goods, commercial biscuits and crackers
<b>Sugar</b>	Reduce – Soft drink, juice, lollies, ice cream, honey, some breakfast cereals
<b>Soy</b>	Eliminate
<b>Gluten</b>	Eliminate – wheat (including spelt), barley, rye, triticale and oats
<b>Alcohol</b>	Reduce / be mindful of intake
<b>Goitrogens</b>	Reduce – Cabbage, soy, cassava, turnip, kale, sweet potato, lima beans, cauliflower, broccoli, radish, Brussel sprouts, millet

\* added this appointment

*Track your intake using the Easy Diet Diary app (free download)*

## Prescription Overview for HAYLEY RAY

Date : 16.09.24



PRESCRIPTION	Breakfast	Lunch	Dinner	Bedtime
<b>BioMedica Bioheme</b> Avoid tea, coffee, soy, dairy and zinc	1 cap (every second day OR Mon/Wed/Fri)			
<b>Raw Wholefood Vitamin C</b>	1 teaspoon			
<b>Mediherb Thyroco</b>	1			
<b>Selenium</b>		5 drops		
<b>Nutritional Compound</b>			1 teaspoon WITH FOOD	
<b>P2 Detox</b>	1 teaspoon WITH FOOD		1 teaspoon WITH FOOD	

*Herbal and nutrient prescriptions are individualised to your own health factors. They should only be taken by the person they are prescribed for. Please advise your naturopath if you commence a new pharmaceutical medication as this may change your herbal/nutrient prescription.*

### Other reminders:

- **Organic Hemp Gold Protein** - plant based protein with complete amino acid profile
- **Roasted Dandelion Tea** - Bonvit Roasted Dandelion Blend (Dandelion and chicory root) is great for the liver (tagged in Osborne)

### Testing Recommendation

- Repeat testing in 3 months (iron studies, vitamin D, full thyroid panel with antibodies, cholesterol panel) mid December

## Detailed goals and rationale for HAYLEY RAY

Date : 16.09.24



HEALTH GOAL	RATIONALE & INFO	DOSE
<b>Herbal Prescription</b>	Reduce TSH, thyroid antibodies and improve T3 using thyroid modulating herbs and iodine containing herbs Improve symptoms of brain fog and poor memory using cognition enhancing herbs Improve the stress response using herbal adaptogens  <i>Fucus vesiculosus, Withania somnifera, Bacopa monnieri</i>	Take 1 tablet daily
<b>Nutritional Compound</b>	Improve hormone signalling pathways (thyroid, insulin, menstrual hormones) Provide cofactors for thyroid hormones production Improve immune function Improve nervous system function and muscle relaxation Improve neurotransmitter production Reduce severity of thyroid related alopecia  Inositol, tyrosine, zinc, magnesium	1 teaspoon daily with dinner  <i>Take away from iron supplement</i>
<b>P2 Detox</b>	Improve hormone metabolism and excretion to reduce menstrual symptoms of menorrhagia, clotting and heaviness  Brassica, <i>Curcuma longa</i> , Glutamine, Glycine, taurine, cysteine, methionine, choline, inositol, potassium	1 teaspoon twice daily with food (breakfast and dinner)
<b>Selenium</b>	Provide cofactors for thyroid hormone production	Take 5 drops (equiv. to 100mcg of selenium) in water or juice daily.

<p><b>Reduce thyroid antibodies by eliminating gluten</b></p>	<p>There is an association between gluten sensitivity and autoimmune thyroid disease due to shared immunopathogenetic mechanisms and genes. Evidence indicates that the elimination of gluten can decrease thyroid antibodies (TgAb and TPOAb) and improve TSH and T4 levels, by reducing inflammation, reducing intestinal permeability and improving gut microbiota.</p> <p>The molecular structure of gliadin, the protein portion of gluten, closely resembles the structure of the thyroid gland tissues. When gliadin leaves the gut and enters the bloodstream, it is recognized as a foreign protein that stimulates the production of antibodies. These antibodies tag the gliadin but also attack the thyroid tissue, meaning the immune system is attacking the thyroid in individuals with autoimmune thyroiditis.</p> <p>Eliminating gluten 100% from the diet will reduce the antibody response and allow for the intestinal lining to heal from chronic inflammation. Healing the intestinal tract lining decreases intestinal permeability, reducing the potential for larger protein molecules to leak into the blood stream and trigger an inflammatory autoimmune response.</p> <p>Gluten is found in wheat (including spelt, durum, kumquat, dinkel), barley, rye, malt and triticale. Oats are usually contaminated with gluten during production. When undertaking a gluten free diet it is important to be careful of cross contamination.</p> <p>Grains that do not contain gluten, include rice, corn/maize, buckwheat, millet, potato, arrowroot/amaranth, tapioca/cassava, sago, lentil, pea, lupin, quinoa</p> <p><a href="https://pubmed.ncbi.nlm.nih.gov/9872614/">https://pubmed.ncbi.nlm.nih.gov/9872614/</a> <a href="https://pubmed.ncbi.nlm.nih.gov/11768252/">https://pubmed.ncbi.nlm.nih.gov/11768252/</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10405818/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10405818/</a> <a href="https://pubmed.ncbi.nlm.nih.gov/30060266/">https://pubmed.ncbi.nlm.nih.gov/30060266/</a></p>	<p>Eliminate</p>
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<p><b>Avoid or limit exposure to the following which can reduce thyroid function</b></p>	<p><b>Milk thistle</b> (St Mary's Thistle, <i>Silybum marianum</i>) – contains silchristin which inhibits thyroid hormone transporter MCT8.</p> <p><b>Quercetin</b> – can inhibit TPO and deiodinase enzymes to reduce conversion of T4 to T3, and blocks iodine uptake. Found in hayfever supplements. Taking under 500mg/day for a short period of time is ok. Long term use is not advised. <a href="https://academic.oup.com/endo/article.149/1/84/2454911">https://academic.oup.com/endo/article.149/1/84/2454911</a> <a href="https://www.ncbi.nlm.nih.gov/pubmed/14757961">https://www.ncbi.nlm.nih.gov/pubmed/14757961</a></p> <p><b>Resveratrol</b> – reduces the expression and activity of the NIS symporter and the uptake of iodine. Avoid high doses and long term use. <a href="http://www.ncbi.nlm.nih.gov/pubmed/28668442">www.ncbi.nlm.nih.gov/pubmed/28668442</a></p> <p>Environmental Chemicals including:  <b>Chlorine</b> –(cleaning products, bleach, pool water, unfiltered water)  <b>Flouride</b> (tooth paste, unfiltered water) – blocks iodine and decreases it's uptake  <b>Pesticides</b> – block iodine uptake. Can results in goitre or hypothyroidism  <b>PCBs</b> (flame retardant's, plastics, foam) – similar in structure to thyroid hormones, binds to thyroid receptors and blocks thyroid hormones from binding  <b>BPA</b> (plastics) – disrupts T3 signalling pathways</p>	
<p><b>Goitrogens</b></p>	<p>Goitrogenic potency can be reduced by washing, soaking, boiling and cooking these foods.</p> <p>Avoid regular consumption of raw cruciferous vegetables such as cabbage, Brussels sprouts, broccoli, cauliflower, mustard greens, kale, and turnip.</p> <p><a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740614/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740614/</a></p>	

<b>Avoid fasting or restrictive diets</b>	<p>Energy and carbohydrate restriction may substantially reduce thyroid hormone activity – nutritional status and energy expenditure influence thyroid function centrally at the level of TSH secretion and deiodination.</p> <p>Calorie restriction is perceived by the body as starvation, which slows down metabolism and increases cortisol through the stress response. Cortisol can exacerbate the effects of hypothyroidism and Hashimotos.</p> <p>Focus on a balanced and nutrient rich diet with adequate calorie intake.</p>	
<b>Optimise Vitamin A intake</b>	<p>Vitamin A is required for thyroid hormone receptor health, allowing receptors to respond to hormones.</p> <p>Vitamin A is also required for vitamin D metabolism.</p> <p>Only a small amount is required and can be easily obtained from the diet</p> <p>Food sources : eggs, liver (pate), butter, cod liver oil, cod, salmon, green leafy vegetables, apricots, pumpkin, sweet potato, carrots</p> <p><a href="https://pubmed.ncbi.nlm.nih.gov/23378454/">https://pubmed.ncbi.nlm.nih.gov/23378454/</a></p>	Target : 700µg/day (women)
<b>Improve thyroid hormone function by reducing soy</b>	<p>Soy or soy enriched foods can reduce T4 absorption and interfere with thyroid hormone action. Soy can increase autoimmune thyroid disease. Soy is goitrogenic.</p> <p>Small amounts of organic soy is not an issue. Soy is not an issue when iodine is adequate.</p> <p><a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740614/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740614/</a></p>	<b>Reduce/limit intake</b>



<p><b>Reduce weight by optimising protein intake</b></p>	<ul style="list-style-type: none"> <li>• increases satiety by increasing hunger-inhibiting hormones (GLP-1, CCK and PYY) and suppress ghrelin.</li> <li>• increases energy expenditure through increases in diet-induced energy expenditure, basal metabolic rate and resting metabolic rate.</li> <li>• Increases muscle mass and prevents muscle loss when ageing</li> <li>• Associated with fat loss while maintaining muscle mass</li> </ul> <p><b>Minimum intake per day to avoid deficiency :</b></p> <p>45g/day for girls 13–18 years  46g/day for women 19–70 years  57g/day for women over the age of 71</p> <p><b>Recommended amount for weight management :</b> 1.2 to 1.6g of protein per kg of body weight per day or 25–30g of protein per meal</p> <p>Research : <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539343/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539343/</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6087750/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6087750/</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9998208/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9998208/</a> <a href="https://doi.org/10.3945/ajcn.114.084038">https://doi.org/10.3945/ajcn.114.084038</a></p>	<p><b>Target :</b> 1.2 to 1.6g of protein per kg of body weight per day or 25–30g of protein per meal</p>
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<p><b>Reduce cholesterol, optimise hormone metabolism and gut microbiome by increasing dietary fibre to 22g per day</b></p>	<ul style="list-style-type: none"> <li>• Balance gut microbiome to support immunity, support neurotransmitter production and reduce inflammation</li> <li>• Improve bowel function and hormone metabolism – excess hormones are bound to fibre and excreted during bowel movements</li> <li>• improves satiety which help with weight loss, also bind fats and lowers absorption of glucose through delaying gastric emptying</li> <li>• Soluble fibre reduces cholesterol reabsorption, improves hormone elimination and improves satiety, improves faeces bulk</li> <li>• Insoluble fibre bulks faeces, improves constipation and speeds up digestion</li> <li>• Resistant starch improves microbiome health to produce short chain fatty acids, which may protect against colon cancer and lower cholesterol levels</li> </ul> <p>Research – <a href="https://www.mdpi.com/2072-6643/12/3/859/htm">https://www.mdpi.com/2072-6643/12/3/859/htm</a> <a href="https://pubmed.ncbi.nlm.nih.gov/33803407/">https://pubmed.ncbi.nlm.nih.gov/33803407/</a></p> <p><b>Optimise dietary fibre</b></p> <ul style="list-style-type: none"> <li>• <i>Soluble fibre – fruit and vegetables, barley, seed husks, flaxseed, psyllium, oat bran, legumes (lentils, peas, dried beans, soy)</i></li> <li>• <i>Insoluble fibre – wheat bran, corn, rive, skins and fruit and vegetables, dried teas, nuts, seeds, wholegrain foods</i></li> <li>• <i>Resistant starch – unripe banana, lentils, unprocessed cereals and grains, cooked and cooled potato and rice</i></li> </ul> <p><a href="https://www.eatforhealth.gov.au/nutrient-reference-values/nutrients/dietary-fibre">https://www.eatforhealth.gov.au/nutrient-reference-values/nutrients/dietary-fibre</a></p>	<p><b>Aim for 30g per day from a variety of sources of fruit, vegetables legumes, seeds and wholegrain.</b></p> <p><i>Increase fibre intake gradually to avoid gastrointestinal side effects.</i></p> <p><i>Track your intake using the Easy Diet Diary app (free download).</i></p>
<p><b>Increase water intake to 2L per day</b></p>	<p>Improve bowel function by increasing water intake to normalise stool consistency and transit times (which will improve cholesterol and hormone elimination)</p> <p>This is particularly important when increasing fibre in the diet. Fibre increases without adequate water intake may lead to constipation</p>	<p><b>2L per day</b></p>

<p><b>Improve iron status through iron supplementation</b></p>	<ul style="list-style-type: none"> <li>• Improve production of healthy red blood cells, in the formation of haemoglobin, and in oxygen transport within the body by correcting iron deficiency</li> <li>• Improve immune function through increasing iron availability for macrophage activity and T lymphocyte proliferation</li> <li>• Improve energy levels by supporting ATP production</li> <li>• Improve thyroid hormone synthesis</li> </ul> <p>Research : <a href="http://www.Ncbi.nlm.nih.gov/pmc/articles/PMC9219084/">www.Ncbi.nlm.nih.gov/pmc/articles/PMC9219084/</a>  <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7193469/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7193469/</a></p> <p>Take iron either upon waking or before bed, at the same time every second day, with a vitamin C supplement. Take 6 hours away from heavy exercise. Avoid supplements containing zinc, selenium or calcium at the same time. Avoid tea, coffee, dairy and soy protein at time of taking iron.</p>	<p><b>Prescribed</b> : BioMedica Bioheme 30 capsules</p> <p>Take 1 capsule every second day</p> <p><i>*** Place a calendar on your fridge and mark it each time you take a capsule OR take your iron on Monday Wednesday Friday if it's easier to remember ***</i></p>
<p><b>Improve iron status through dietary strategies</b></p>	<p>Optimise iron rich foods to improve iron status</p> <p>Haem iron sources : meat (beef, lamb, pork, kangaroo), poultry (chicken, turkey, eggs), seafood (salmon, sardines, tuna) and organ meats (liver, kidney, pate)</p> <p>Non-haem sources : ;legumes (mixed beans, lentils, chickpeas), dark green leafy vegetables (spinach, silver beet, broccoli), tofu, nuts, seeds, dried fruit, wholemeal pasta and bread</p>	<p>Recommended Daily Intakes</p> <p><b>Female 14-18 years :</b>  <b>15mg/day</b>  <a href="https://www.nrv.gov.au/resources/nrv-summary-tables">https://www.nrv.gov.au/resources/nrv-summary-tables</a></p>
<p><b>Optimise Iron Absorption through nutritional supplementation of vitamin C</b></p>	<p>Improves iron absorption by enhancing the bioavailability of iron</p> <p>In addition to improving iron absorption, vitamin C:</p> <ul style="list-style-type: none"> <li>• Supports healthy immune system function</li> <li>• Supports collagen synthesis to improve skin health</li> </ul>	<p>Prescribed : Morning nutrient compound</p> <p>Take each morning with breakfast</p>

<p><b>Decrease inflammation and improve microbiome through decreasing dietary saturated fats</b></p>	<p>Excess saturated fats stimulate NF-κB signalling to increase inflammatory cytokines</p> <p>Saturated fats negatively alter microbiome by decreasing diversity, gram-negative species and short chain fatty acid production, while increasing pathogenic species</p> <p>Saturated fats are found in fried foods, dairy products, coconut oil, butter, takeaway foods, bakery goods, commercial biscuits and crackers</p> <p>Research: <a href="https://doi.org/10.1093/advances/nmz125">https://doi.org/10.1093/advances/nmz125</a></p>	
<p><b>Reduce inflammation by optimising dietary intake of essential fatty acids</b></p>	<p>Include these sources of essential fatty acids in your diet on a regular basis:</p> <ul style="list-style-type: none"> <li>• flaxseed/linseed</li> <li>• chia seeds</li> <li>• walnuts</li> <li>• Hemp seeds, hemp seed oil</li> </ul> <p>Increase Omega-3 intake by inclusion of fatty fish of 2-3 serves per week, with a serve being 150g. Select fish high in Omega-3, including mullet, salmon (Atlantic or Australian), mackerel, sardine, rainbow trout, bream or silver perch.</p> <p>Research: <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7875671/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7875671/</a>  <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6117694/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6117694/</a> <a href="https://doi.org/10.1111/j.1753-4887.2010.00287.x">https://doi.org/10.1111/j.1753-4887.2010.00287.x</a></p>	<p>Aim for 2-3 serves (150g) of fish per week</p>
<p><b>Reduce inflammation by reducing sugar intake</b></p>	<p>Reduce sugar – the high-dose fructose you get from desserts, honey, fruit juice, and dried fruit. There is no need to reduce fruit, as the fructose in fruit is lower dose and whole fruit contains fibre to slow the spike in blood sugar from fruit.</p>	

<b>Improve thyroid related alopecia through optimising dietary zinc</b>	<p>Zinc is essential for proper immune function, taste and smell, and hormone function (including thyroid and reproductive hormones)</p> <p>Adequate zinc levels are crucial for maintenance of healthy hair and skin, along with other trace minerals, including selenium.</p> <p>Thyroid related alopecia can worsen with lack of zinc and selenium. Research shows that zinc supplementation improves thyroid hormone function by improving T3 activation.</p> <p>While zinc is available in a variety of food sources, it is absorbed more readily from animal-based foods.</p>	<b>8mg/day</b>
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