

## **Treatment Plan for Hayley Ray**

**Date :** 17.05.24



**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 and reduce side effects of night shift work
- 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 4 weeks

## Nutrition Overview for HAYLEY RAY

Date : 17.05.24



Include the following foods...		Target
<b>Protein</b>	<b>Optimal sources</b> - poultry (chicken, turkey, duck), seafood, eggs <b>Plant sources</b> - quinoa, chickpeas, lentils, nuts, seeds, peas, beans, tempeh, hemp seeds, hemp protein powder <b>Limit</b> - dairy, red meat, processed meats (bacon, sausages, deli meats) <b>Avoid</b> - soy protein	25-30g per meal
<b>Fibre</b>	<b>Soluble fibre</b> - fruit and vegetables, barley, seed husks, flaxseed, psyllium, oat bran, legumes (lentils, peas, dried beans, soy) <b>Insoluble fibre</b> - wheat bran, corn, rive, skins and fruit and vegetables, dried teas, nuts, seeds, wholegrain foods <b>Resistant starch</b> - unripe banana, lentils, unprocessed cereals and grains, cooked and cooled potato and rice	25g/day
<b>Water</b>		2L/day
<b>Essential Fatty Acids</b>	Fatty fish - salmon, mackerel, anchovies, sardines, herring flaxseed/linseed, chia seeds, walnuts	2-3 serves (150g) of fish per week
<b>Iron</b>	<b>Haem iron sources</b> : meat (beef, lamb, pork, kangaroo), poultry (chicken, turkey, eggs), seafood (salmon, sardines, tuna) and organ meats (liver, kidney, pate) <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	18mg/day
<b>Folate</b>	Dark green leafy vegetables, legumes, rice, avocado, beef liver	400µg/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

**\* added this appointment**

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

## Prescription Overview for HAYLEY RAY

Date : 17.05.24

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>Herbal Prescription</b>	7.5mL		7.5mL	(Or 7.5mL twice per day)
<b>* Selenium</b>			1	
<b>* Nutritional Compound</b>			X with dinner	

\* added this appointment

### Other reminders:

- **Organic Hemp Gold Protein** - plant based protein with complete amino acid profile
- **Cold Water Exposure** - three times per week (please see the handout for more details)
- **Roasted Dandelion Tea** - Bonvit Roasted Dandelion Blend (Dandelion and chicory root) is great for the liver (tagged in Osborne)

### Testing Recommendations

- Coeliac testing could be considered prior to eliminating gluten. Coeliac disease and Hashimoto's have shared genes. Coeliac serology (deaminated gliadin and transglutaminase IgA) is only useful when regularly consuming gluten, and will show if disease is present. Coeliac gene testing can be performed anytime, and will show if the gene is present, however this does not indicate if the disease is active.

## Detailed goals and rationale for HAYLEY RAY

Date : 17.05.24



HEALTH GOAL	RATIONALE & INFO	DOSE
<b>Reduce thyroid antibodies by eliminating gluten</b>	<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>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>	<b>Eliminate</b>
<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>  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>Herbal Prescription</b>	<p>Reduce TSH, thyroid antibodies and improve T3 using thyroid modulating herbs and iodine containing herbs</p> <p>Normalise the immune response using immunomodulating herbs</p> <p>Reduce inflammation systemically and in thyroid using anti inflammatory herbs</p> <p>Improve symptoms of brain fog and poor memory using cognition enhancing herbs</p> <p>Improve the stress response using herbal adaptogens</p> <p><i>Nigella sativa, Fucus vesiculosus, Rehmannia glutinosa, Echinacea spp, Zingiber officinalis</i></p>	<p>7.5mL twice daily</p> <p>Commence after completing previous herbal</p>
<b>Nutritional Compound</b>	<p>Improve hormone signalling pathways (thyroid, insulin, menstrual hormones)</p> <p>Provide cofactors for thyroid hormones production</p> <p>Improve immune function</p> <p>Improve nervous system function and muscle relaxation</p> <p>Improve neurotransmitter production</p> <p>Inositol, tyrosine, zinc, magnesium</p>	<p>5.2g daily with dinner</p>
<b>Selenium</b>	<p>Provide cofactors for thyroid hormone production</p>	