

Reversing Chronic Disease:  
Lessons from Integrative Medicine

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A tale of two patients with diabetes...

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Who believes that type 2 diabetes can be reversed?

WHETHER YOU  
**THINK YOU CAN,**  
OR THINK YOU CAN'T.  
**YOU'RE RIGHT.**

(HENRY FORD)

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### Vegan and Vegetarian diets in Type 2 Diabetes

- 2014 meta-analysis of vegetarian diets found a significant reduction in HgbA1c (-0.39 points) compared to control diets
- 2016 RCT compared a brown-rice-based vegan diet with a conventional diabetic diet
  - Vegan diet (brown rice, low-GI foods –ie. legumes, green vegetables, & seaweed), avoid polished/white rice, processed food made of flour, and animal foods. Portions, calories, and frequency of meals were not restricted
  - Hemoglobin A1c levels decreased by 0.5 points in the vegan group compared with 0.2 points in the conventional group

Yokoyama Y, et al. Vegetarian diets and glycemic control in diabetes: a systematic review and meta-analysis. Cardiovasc Diagn Ther. 2014;4:373-382.  
Lee NK, et al. Effect of a brown rice based vegan diet and conventional diabetic diet on glycemic control of patients with type 2 diabetes: a 12-week randomized clinical trial. PLoS One. 2016;

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### Low Carb diet reverses Type 2 Diabetes

- 186 patients followed a low-carbohydrate diet for ~34 months:
  - 77% achieved remission if began within 1 year of diagnosis
  - 15% achieved remission if diagnosed 1-5 years previously
  - 11% achieved remission if diagnosed 6-15 years previously
- Results:
  - HgbA1c reduced 33%
  - Triglycerides reduced 30%
  - Systolic blood pressure reduced 8.6%
  - Total cholesterol reduced 10%
  - Weight dropped by an average of 10.3%



Uhrain D, et al. What predicts drug-free type 2 diabetes remission? Insights from an 8-year general practice service evaluation of a lower carbohydrate diet with weight loss BMJ Nutrition, Prevention & Health 2021:e000544.

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### Intermittent Fasting for diabetes

- 3-month intermittent fasting diet intervention among 36 people
  - 90% of participants, including those on blood sugar-lowering agents and insulin, reduced their diabetes medication after intermittent fasting
  - 55% experienced diabetes remission, discontinued diabetes medication, and maintained it for at least one year
  - 65% percent of the participants who achieved diabetes remission had a diabetes duration >6 years

Manoogian ENC et al. Time-restricted Eating for the Prevention and Management of Metabolic Diseases. Endocrine Reviews. 2022; 43 (2): 405

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### Intensive Lifestyle Program

- Randomized controlled trial in Qatar (n=158)
- Compared intensive lifestyle intervention with usual care on weight loss and glycemic outcomes in patients with type 2 diabetes, ages 18–50; diabetes duration ≤3 years; BMI of >27
- Two groups:
  - low-energy diet meal replacement product phase → gradual food reintroduction with physical activity support → weight-loss maintenance phase, with lifestyle support
  - usual diabetes care based on clinical guidelines
- Results
  - Intervention group mean body weight decreased 12 kg compared with 4 kg in controls
  - 21% of participants achieved >15% weight loss compared with 1% in control group
  - 61% of participants in intervention group went into diabetes remission compared with 12% of controls

Taheri S, et al. Effect of intensive lifestyle intervention on bodyweight and glycaemia in early type 2 diabetes (DIADEM-II). *The Lancet*. Vol 8 Issue 5; 477-489, June 2020

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### Vitamin D meta-analysis



- 3 trials, 4,190 participants
- Vit D prevents progression from pre-DM to DM
  - a 15% reduction in the risk of new-onset diabetes
  - If vitamin D level maintained at 125 nmol/L or higher the risk of developing diabetes was reduced by 76%
- 1 out of 6 people in UK have vitamin D deficiency
- "Side Benefits" – bone health, mental health, cancer prevention, immune function

Vitamin D effective in preventing the progression of pre-diabetes to diabetes. *Annals of Int Med*, Feb 2023  
<https://www.nutrition.org.uk/news/2023/british-nutrition-foundation-survey-reveals-49-adults-unaware-of-uk-government-guidelines-for-vitamin-d/>

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### Why now? Diabetes in the UK

Prevalence: 1 in 10 adults over the age of 40 has diabetes

The number of people with diabetes is expected to reach 5.5 million by 2030



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**Cost of diabetes**



- £14 billion per year to treat diabetes and its complications
- The NHS already offers the Diabetes Prevention Program
  - One million people have been referred to the programme since it was launched in 2016
  - 7% reduction in the number of new diagnoses of Type 2 diabetes in England 2018-2019
  - Completers of the 9-month NHS programme reduce chance of getting diabetes 37%

<https://www.diabetes.co.uk/cost-of-diabetes.html>  
<https://www.england.nhs.uk/2022/03/nhs-prevention-programme-cuts-chances-of-type-2-diabetes-for-thousands/>

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**Recovery Principles:**



- The power of a message: "You can get well"
- Humility: There may be multiple paths to healing
- Curiosity: what else is out there that could help
- Addressing sooner is better – and it is never too late

Whiteley C, et al. Determining Dietary Patterns to Recommend for Type 2 Diabetes: An Umbrella Review. *Nutrients*. 2023 Feb 8;15(4):861.

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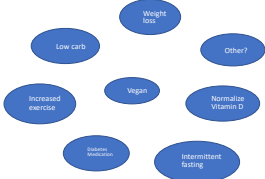
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**Motivational Interviewing:**  
providing a menu of options



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**Integrative Medicine**

Healing-oriented medicine that takes account of the whole person, including all aspects of lifestyle. It emphasizes the therapeutic relationship between practitioner and patient, is informed by evidence, and makes use of all appropriate therapies.

- Individualized recommendations
- Gets to the roots of an illness
- Works with patients' beliefs and preferences
- Professional satisfaction



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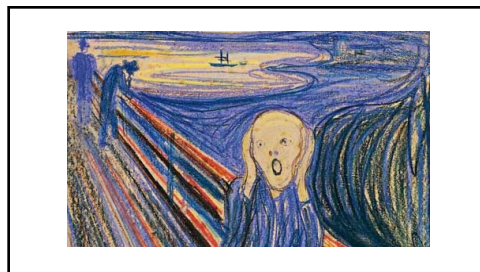
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### Limitations of existing medications

- Benzodiazepines
  - Addiction
  - Dependence
  - Hard to wean off
  - Falls in elderly
  - Cognitive changes
  - Long term ineffective
- Anti-depressants
  - Transient headache
  - Nausea
  - Drowsiness or agitation
  - Weight gain
  - Anorgasmia
  - Withdrawal challenging for many patients

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### Integrative Medicine Approach to Anxiety:



- Multiple tools
- Shifts locus of control
- Synergism of multiple strategies

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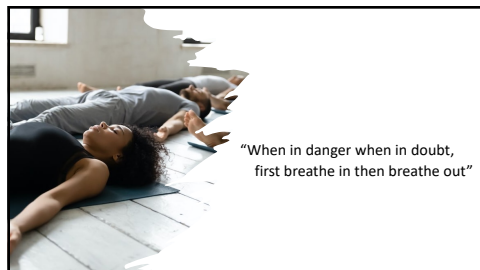
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Overestimation of danger  
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Underestimation of coping skills

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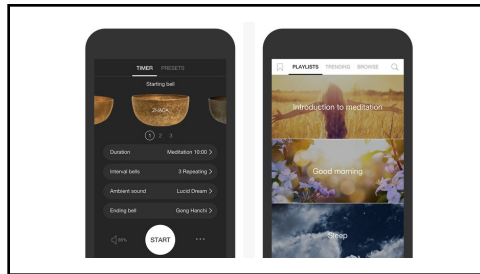
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**Evidence based supplements:**

**Prevention:**

- Omega 3 ≥ 2000 mg/d, EPA < 60% effective ratio
- High dose B vitamins
- Magnesium – 200-400mg at bedtime
- Vitamin D3 – test 25(OH) to assess dose

**Treatment:**

- Kava kava – as a tea or tincture
- L theanine – 200-400 mg
- Valerian – 300-900 mg
- And, many more...

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References:

- Rucklidge JJ. Broad-spectrum micronutrient formulas for the treatment of psychiatric symptoms: a systematic review. *Expert Rev. Neurother.* 13(1), 49-73;2013.
- Su K. Association of Use of Omega-3 Polyunsaturated Fatty Acids With Changes in Severity of Anxiety Symptoms A Meta-analysis. *JAMA Network Open.* 2018;1(5):e182327
- Williams JL. The Effects of Green Tea Amino Acid L-Theanine Consumption on the Ability to Manage Stress and Anxiety Levels: a Systematic Review. *Plant Foods Hum Nutr.* 2020 Mar;75(1):12-23
- Tarleton. Role of magnesium supplementation in the treatment of depression: A randomized clinical trial. *PLoS One.* 2017 Jun 27;12(6)
- Eid A. Vitamin D supplementation ameliorates severity of generalized anxiety disorder. *Metab Brain Dis.* 2019 Dec;34(6)

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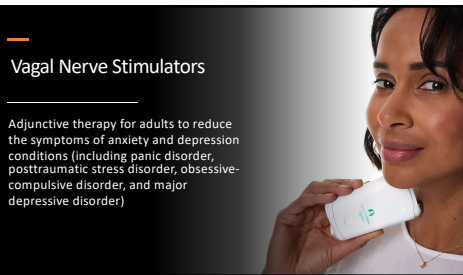
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**Vagal Nerve Stimulators**

Adjunctive therapy for adults to reduce the symptoms of anxiety and depression conditions (including panic disorder, posttraumatic stress disorder, obsessive-compulsive disorder, and major depressive disorder)

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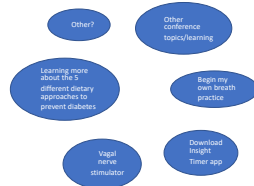
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Motivational Interviewing:  
what one thing might you want to learn – or do




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