Herbs, Foods and Nutrients for Healthy Microcirculation

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Two controlled trials have investigated the activity of Gotu Kola actives (triterpenoids)

The largest trial involved 100 patients and compared the extract with placebo over 12 months and also 40 healthy controls

It was significantly more effective at improving microcirculatory measures and edema

Gotu Kola and Microcirculation

- A smaller trial in 50 patients compared Gotu Kola actives to placebo or no treatment for 6 months
- There were significant improvements in measures linked to the microcirculatory system, including capillary permeability


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Ginkgo and Microcirculation

- A single dose of standardized Ginkgo extract (112.5 mg) resulted in a significant increase in blood flow in nail capillaries in healthy volunteers\(^1\)
- Another study demonstrated increased blood flow to the forearms of volunteers\(^2\)
- This confirms the ability of Ginkgo to enhance microcirculatory flow

Grape Seed and Microcirculation

- Numerous clinical trials using doses of between 100 and 150 mg/day of OPCs from Grape Seed have demonstrated a beneficial effect on capillary resistance and capillary permeability.
- For example, 100 mg/day of OPCs was administered to elderly patients with capillary fragility.
- Very good results were achieved in 67%, good in 17% and moderate in 13%.

Morgan M, Andrews C. *Nutritional Perspective* 2007; **26**: 1-3
Garlic (particularly as the fresh-crushed raw clove or as an allicin-releasing powder) is good for both the microcirculation and microcirculatory flow. For example, in a controlled clinical trial a single 900 mg dose of Garlic powder significantly increased capillary skin perfusion by 55%.

Another study found that Garlic powder (600 mg/day) administered for 7 days increased calf blood flow by approximately 15%.

Bilberry and Microcirculation

- In open trials, bilberry extract improved symptoms caused by decreased capillary resistance (fragility, bleeding and bruising)\(^1\)

1 Piovella C, Curri BS, Piovella M et al. *Therapia Angiol* 1979; **35**: 119
Beets and Microcirculation

- Beets $\rightarrow$ Nitrate
- It is now realized that a specific pathway in the body can make nitric oxide from dietary nitrate; the nitrate-nitrite-nitric oxide pathway
- This has profound implications for microcirculatory and endothelial health, and for healthy circulatory function
Cocoa is Healthy!

- There are several studies suggestive of cocoa’s positive effect on the microcirculation and endothelium.
- In a clinical trial, the impairment of endothelial function caused by a glucose challenge was reduced by dark chocolate, but not white chocolate.\(^1\)
- Dark chocolate supported healthy endothelial function in breath-hold divers.\(^2\)

Green Tea and Endothelial Health

- Green Tea (2 weeks) supported healthy forearm endothelial function in smokers\(^1\)
- There was a significant increase in plasma nitric oxide
- Green Tea (4 weeks) improved flow mediated dilatation (from 5.7 \(\pm\) 2.7\% to 8.7 \(\pm\) 3.5\%) in patients with chronic kidney disease\(^2\)

The 5-Point Dietary Plan

1. Boost dietary nitrate: green leafy vegetables, but especially beets as juice or a supplement
2. Increase cocoa intake: 85% chocolate, about 2/3 oz/day
3. Increase berry anthocyanin intake: 2 to 3 oz/day of blueberries, strawberries, raspberries and blackberries
4. Raw crushed Garlic: ½ to 1 clove/day
5. Increase herbs and spices: especially Green Tea (3 to 4 cups/day), Turmeric and Ginger
Gymnema

- Known in Hindi as gurmar or sugar destroyer
- When applied to the mouth it anesthetises the sweet taste buds for several hours
- Been used to address healthy blood sugar metabolism for more than 2000 years
- Activity has been verified by clinical trials

Lowering GI with Herbs

- The glycemic index (GI) is an assessment of the rate of glucose elevation in the bloodstream following the intake of a particular food.
- Any herb which delays gastric emptying will reduce GI. These include mucilages.
- Tannins (eg Green Tea) also interfere with digestive processes and saponins (eg Gymnema) can disrupt glucose transport.
Milk Thistle and Healthy Sugar Metabolism

- A recent placebo-controlled clinical trial found that Silymarin extract (200 mg TDS) for 4 months exerted a beneficial effect on glycemic profile in relatively well-controlled people.
- There were significant reductions in HbA$_1^C$ (13%), fasting blood glucose (15%), total cholesterol (12%), LDL-cholesterol (11%) and triglycerides (25%).

Korean Ginseng and Healthy Sugar Metabolism

- In well-controlled people Korean Ginseng caused no change in HbA\textsubscript{1C} or fasting plasma glucose in a placebo-controlled clinical trial.
- However, fasting plasma insulin was significantly reduced for Korean Ginseng (by 34%) whereas it increased in the placebo group (by 10%).
- In other words Korean Ginseng lowered insulin resistance.

Resveratrol and Healthy Sugar Metabolism

- Resveratrol has improved healthy insulin response in clinical trials
- In one trial just 10 mg per day over 4 weeks (randomized, placebo-controlled) improved insulin responses and incretin levels

Discussion and Questions