

PRODUCT	MOA	DOSE AND DURATION	EFFICACY	SAFETY
HYPOGLYCEMIC AGENTS				
Fenugreek	<ul style="list-style-type: none"> Fibrous seeds may affect GI transit time, slowing glucose absorption (bulk laxative) 4-hydroxy-isoleucine in the seed stimulates glucose-dependent insulin secretion (hypoglycemic effects) 	<ul style="list-style-type: none"> 2.5 – 15 g daily Capsules come in 600 mg – 1 g Crushing seeds vital to release viscous gel fiber 	<ul style="list-style-type: none"> In combo with sulfonylureas: ↓ FBG, HbA1C by 0.5% Systemic review: ↓FBG (0.96 mmol/dL) Prediabetics: ↓ post-prandial & fasting BG, ↑ serum insulin, RRR of developing T2DM 0.6 <ul style="list-style-type: none"> Poor study, each was own control 	<ul style="list-style-type: none"> Well tolerated Diarrhea, flatulence Contraindicated in pregnancy (uterine stimulant) Avoid in thyroid conditions (hypothyroid effects) Caution with anti-platelet/coagulants (contains coumarin derivative) = ↑ risk of bleeding/bruising Monitor BG
Gymnema Sylvestre (Gurmar)	<ul style="list-style-type: none"> Enhances insulin release from beta cells Decreases intestinal absorption of glucose Use leaves of the plant 	<ul style="list-style-type: none"> 200 mg bid used for up to 20 months 	<ul style="list-style-type: none"> ↓ HbA1c, cholesterol, TGs, dose of hypoglycemic drugs <ul style="list-style-type: none"> Poor study (no R, DB) 	<ul style="list-style-type: none"> Avoid in pregnancy
Bitter melon (Momordica charantia)	<ul style="list-style-type: none"> Believed to have similar effects to bovine insulin 		<ul style="list-style-type: none"> Small studies, mixed results 	<ul style="list-style-type: none"> Caution pts taking hypoglycemic drugs who eat bitter melon
INSULIN SENSITIZERS:				
Chromium (also used in weight loss products)	<ul style="list-style-type: none"> Cofactor for insulin function: <ul style="list-style-type: none"> Helps transport glucose into cell by increasing insulin binding Increases number of insulin receptors May enhance insulin sensitivity by activating intracellular signalling pathways Chromium deficiency has similar features to diabetes 	<ul style="list-style-type: none"> 200 – 1400 ug used for up to 6 months Use <u>picolinate salt</u> (better absorption and bioavailability) Food sources: broccoli, grape juice, whole wheat muffin, red wine, Brewers' yeast 	<ul style="list-style-type: none"> HbA1C ↓ by 0.58% <ul style="list-style-type: none"> Picolinate salt: -0.6% Brewers yeast: -1.85% FBG ↓ by 1.13 TG: ↓ by 0.3 HDL: ↑ by 0.12 	<ul style="list-style-type: none"> Well tolerated (some GI upset) SAFE in pregnancy and breastfeeding Contraindicated in renal disease (excessive Cr may damage kidneys) Space apart from levothyroxine (binding interaction)
Cassia cinnamon	<ul style="list-style-type: none"> Promotes insulin release and enhances insulin receptor sensitivity (animal studies) 	<ul style="list-style-type: none"> Up to 6 g/d of cassia cinnamon NOTE: most stores sell cinnamon bark (C. verum) instead 	<ul style="list-style-type: none"> Insufficient evidence <ul style="list-style-type: none"> ↓ FBG (-1.36), LDL (-0.52), TG (-1.42); ↑ HDL-C (0.09) – all ss but clinical significance?? No improvement in HbA1C 	<ul style="list-style-type: none"> Very well tolerated Contains coumarin constituents (high doses for long time = liver damage) Avoid in pregnancy
MISC.				
Alpha lipoic acid	<ul style="list-style-type: none"> Coenzyme involved in carb metabolism (naturally synthesized in mitochondria) Antioxidant properties (regenerate other antioxidants like Vit E and C) Improves insulin sensitivity (conflicting) 	<ul style="list-style-type: none"> 600 mg (divided doses) up to 2 years May take 3-5 weeks for symptom relief 	<ul style="list-style-type: none"> Improved nerve conduction velocity & diabetic peripheral neuropathy sx (pain, burning) Doesn't lower HbA1C 	<ul style="list-style-type: none"> Higher doses more likely to produce AEs (vertigo, NV) Avoid in pregnancy
White mulberry (also used in weight loss products)	<ul style="list-style-type: none"> Leaf extract inhibits alpha-glucoside in gut, preventing absorption of carbs → lower post-prandial BG 	<ul style="list-style-type: none"> 1g powdered leaf before a meal 	<ul style="list-style-type: none"> Limited <ul style="list-style-type: none"> No change in HbA1C ↓ post-prandial BG 	<ul style="list-style-type: none"> Avoid in pregnancy Well tolerated Monitor glucose & A1C
Glucomannan or PGX (also used in weight loss products)	<ul style="list-style-type: none"> Root of elephant yam Highly viscous soluble fiber that absorbs water → slows absorption of carbs → slows down release of sugars in gut 		<ul style="list-style-type: none"> ↓ in FBG <ul style="list-style-type: none"> Poor methods 	<ul style="list-style-type: none"> May reduce drug absorption (space drugs) Some cases of GI obstruction <ul style="list-style-type: none"> Take with LOTS of water Don't use if difficulty swallowing Avoid in pregnancy