

DEKAs after Bariatric Surgery*



Once Daily All-in-one Multivitamin and Mineral Chewable
Tablets with Enhanced Absorption for Dietary Management
after Bariatric Surgery

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* Food for Special Medical Purposes, use only under medical supervision



Decades of Formulation and Clinical Research Experience
Helping Patients Overcome Micronutrient Malabsorption

DEKAsvitamins.com

DEKAs Product Concept

Registered as Food for Special Medical Purposes

Use under medical supervision

DEKAs comes with a clinically tested delivery technology

- Experte agree that the DEKAs delivery technology enhances absorption of fat-soluble vitamins and micronutrients.¹

DEKAs Bariatric covers all relevant vitamins and minerals in one tablet ²

- DEKAs supplies all micronutrients recommended in US Bariatric Surgery guidelines.^{2,3}

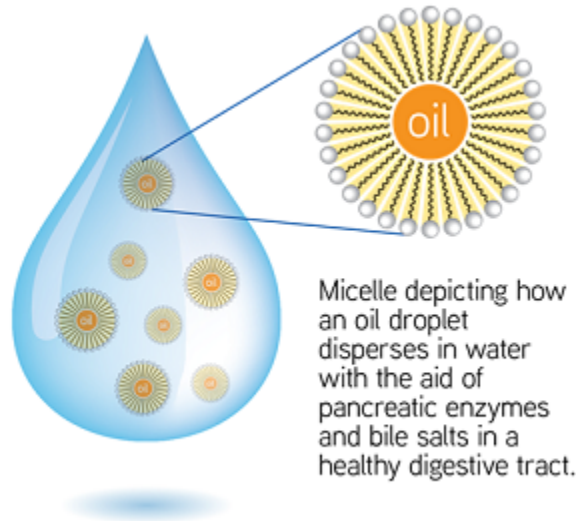
DEKAs Bariatric offers scalable dosing to cover all forms of Bariatric Surgery

- The most recent guidelines show that patients with gastric banding or a sleeve gastrectomy may need lower doses for supplementation than patients operated with other techniques.³ Therefore the dosing of DEKAs allows a choice between 1 or 2 chewable tablets per day, depending on patient, procedure and healthcare professional preferences.

1. EASL Clinical Practice Guidelines: Management of cholestatic liver diseases European Association for the Study of the Liver, Journal of Hepatology , Volume 51 , Issue 2 , 237 – 267. DOI: <http://dx.doi.org/10.1016/j.jhep.2009.04.009>
2. DEKAs Bariatric does not supplement calcium as this should not be combined with the supplementation of iron.
3. Parrot J, Frank L, Dilks R, et al. American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients, In Surgery for Obesity and Related Diseases, Volume 13, Issue 5, 2017, Pages 727-741, ISSN 1550-7289, <https://doi.org/10.1016/j.soard.2016.12.018>.

DEKAs Delivery Technology

Based on micelle forming ingredients^{1,2}



DEKAs delivery technology has been clinically proven to increase the absorption of fat-soluble vitamins and other lipophilic compounds in conditions of malabsorption such as in cholestatic liver disease and cystic fibrosis.^{1,2}

Gastric Roux-en-Y bypass (RYGB) surgery in detail

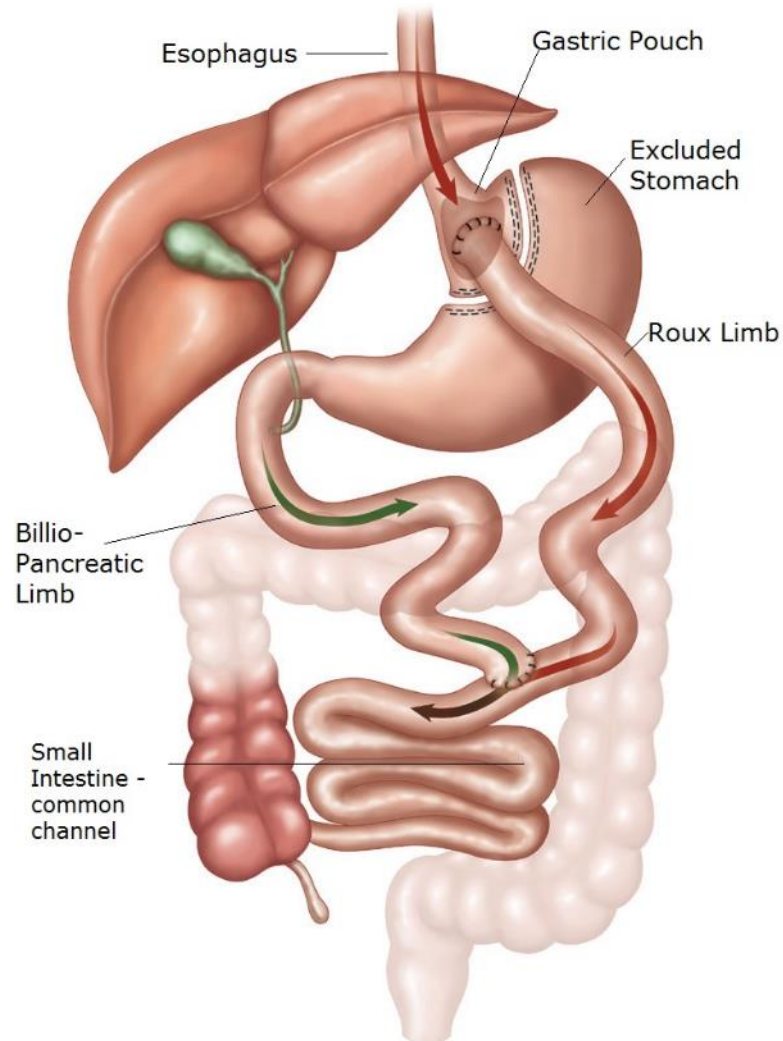
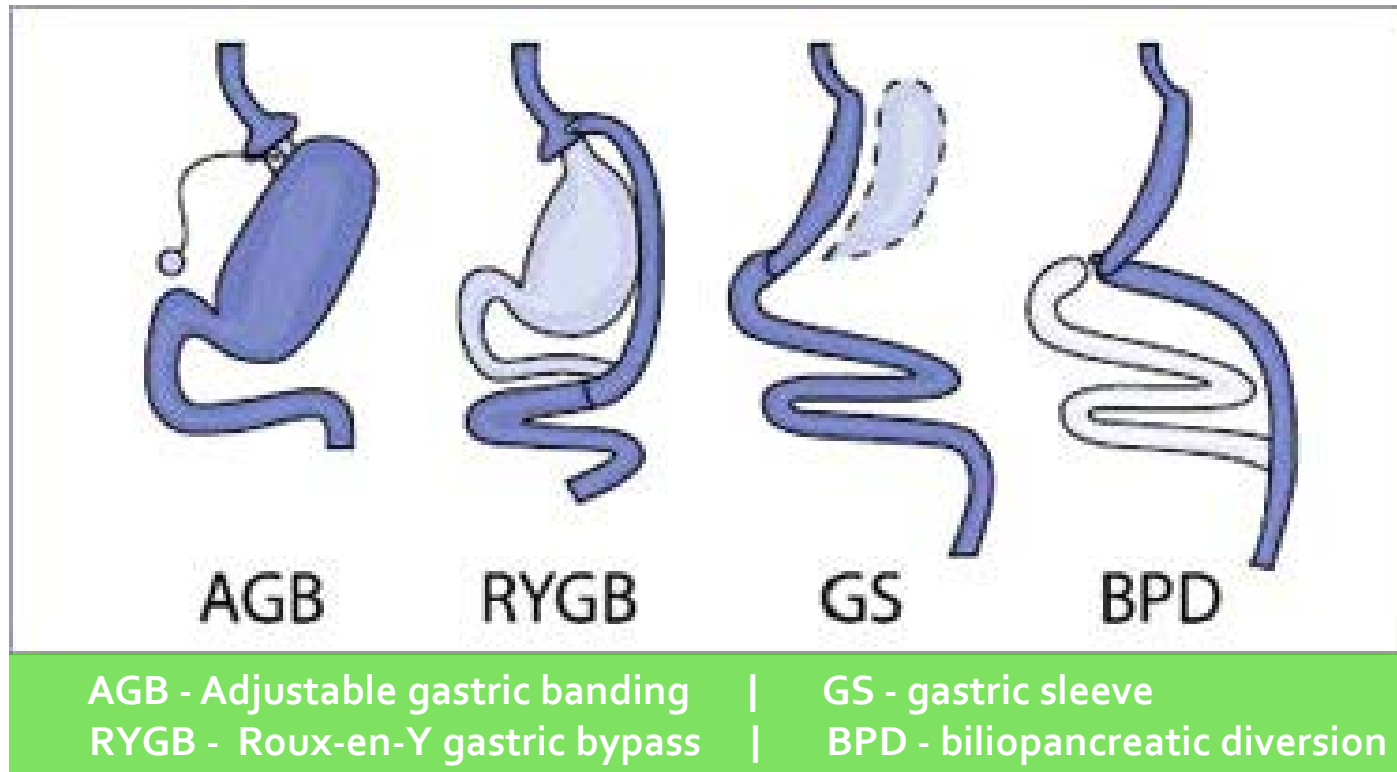


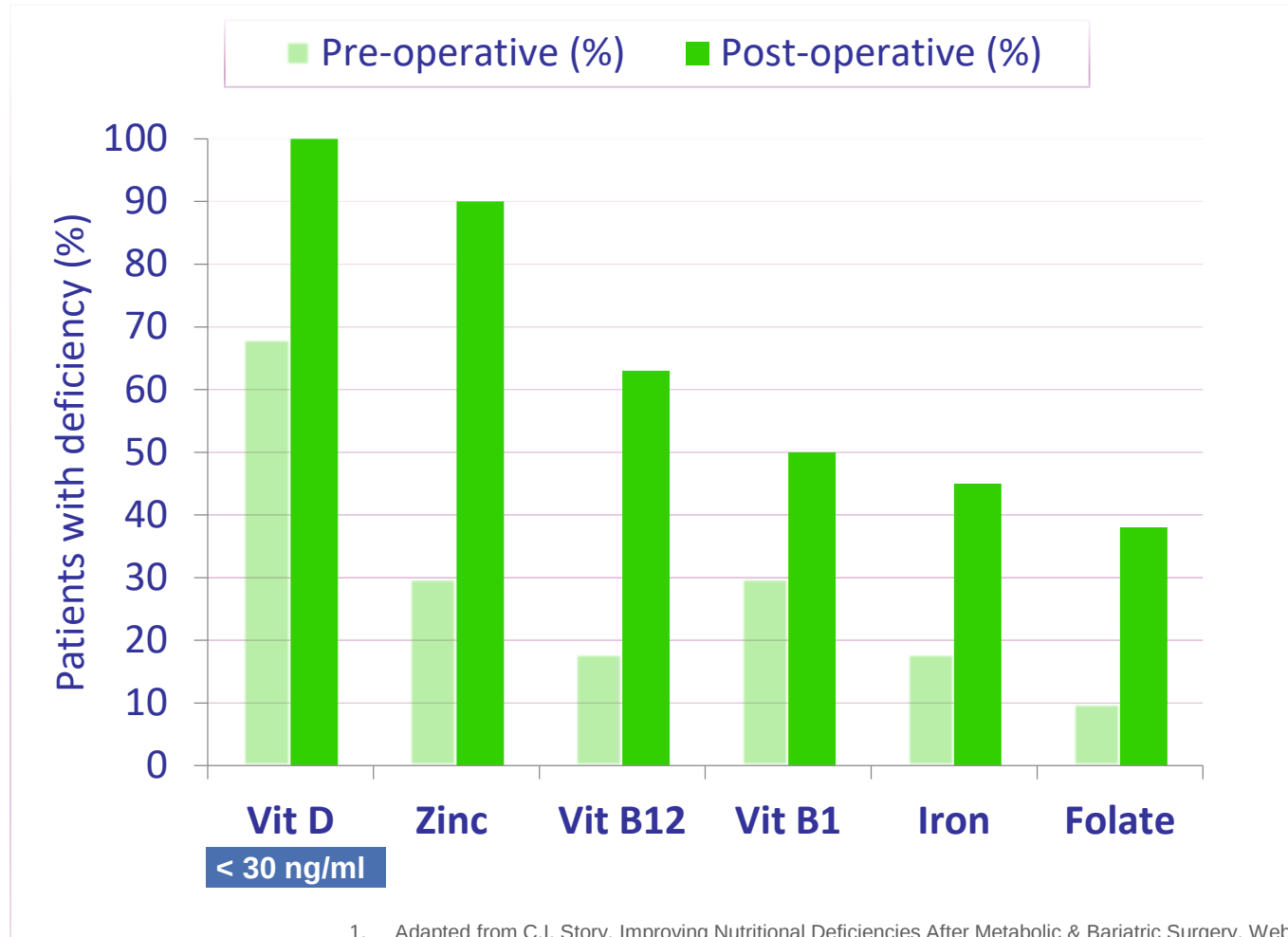
Diagram of common surgical options in Bariatric Surgery^{1,2}

Different procedures require different post-operative supplementation regimes



Multiple High Rates of Micronutrient Deficiency¹⁻³

Both pre- and post Bariatric Surgery



1. Adapted from C.I. Story, Improving Nutritional Deficiencies After Metabolic & Bariatric Surgery, Webinar August 2017.
2. Stein, J., Stier, C., Raab, H. *et al.* (2014), Review article: the nutritional and pharmacological consequences of obesity surgery. *Aliment Pharmacol Ther*, 40: 582–609. doi:10.1111/apt.12872
3. Parrot J, Frank L, Dilks R, et al. American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients, In *Surgery for Obesity and Related Diseases*, Volume 13, Issue 5, 2017, Pages 727-741, ISSN 1550-7289, <https://doi.org/10.1016/j.soard.2016.12.018>.

Guidelines for supplementation after Bariatric Surgery

Only ASMBS 2016 guideline specifies type and amount of micronutrients⁵

- 1. American Soc. for Metabolic & Bariatric Surgery - ASMBS (2008)**
Allied Health Nutritional Guidelines for the Surgical Weight Loss Patient
- 2. Endocrine Soc. Clinical Practice Guideline (2010)**
Endocrine and Nutritional Management of the Post-bariatric Surgery Patient
- 3. European Assoc. for the Study of Obesity - EASO
Int. Fed. for the Surgery of Obesity and Metabolic Dis. - IFSO-EC (2013)**
Interdisciplinary European Guidelines on Metabolic and Bariatric Surgery
- 4. American College Endocrinology (ACE) / The Obesity Society (TOS) (2013 Update)**
Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient
- 5. ASMBS (2016 Update)**
Micronutrients

1. Aills L, Blankenship J, Buffington C, *et al.* ASMBS Allied Health Nutritional Guidelines for the Surgical Weight Loss Patient. *SOARD*. 4 (2008); S73-S108. DOI: 10.1016/j.soard.2008.03.002
2. Heber D, Greenway FL, Kaplan LM, *et al.* Endocrine and Nutritional Management of the Post-Bariatric Surgery Patient: An Endocrine Society Clinical Practice Guideline, *The Journal of Clinical Endocrinology & Metabolism*, Volume 95, Issue 11, 1 November 2010, Pages 4823–4843, <https://doi.org/10.1210/jc.2009-2128>
3. Fried M, Yumuk V, Oppert J, *et al.* Interdisciplinary European Guidelines on Metabolic and Bariatric Surgery. *Obes Facts* 2013;6:449-468. <https://doi.org/10.1159/000355480>
4. Mechanick J.I., Youdim A., Jones D.B., *et al.* Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient - 2013 update: Cosponsored by American Association of Clinical Endocrinologists, the Obesity Society, and American Society for Metabolic & Bariatric Surgery (2013) *Surgery for Obesity and Related Diseases*, 9 (2) , pp. 159-191. DOI: <http://dx.doi.org/10.1016/j.soard.2012.12.010>
5. Parrot J, Frank L, Dilks R, *et al.* American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients, In *Surgery for Obesity and Related Diseases*, Volume 13, Issue 5, 2017, Pages 727-741, ISSN 1550-7289, <https://doi.org/10.1016/j.soard.2016.12.018>.

DEKAs Bariatric guideline-compliant dosing

Comparison to competitors in N-Europe

Start with one per day.
Increase to two if needed

Nutrient	Unit	Prod. A 1 tab	Prod. B 1 tab	DEKAs 1 tab	Daily Dose		DEKAs 2 tabs
Vitamin A	µg <i>IU</i>	600 2000	1200 4000	1500 5000			3000 10000
Vitamin B1	mg	3	4,2	12,5			25
Vitamin B12	µg	350	500	500			1000
Vitamin D	µg <i>IU</i>	75 3000	50 2000	62,5 2500	Gastric Band	RYGB	125 5000
Vitamin E	µg <i>IU</i>	24 36	24 36	47 70	Sleeve	BPD/DS	95 141
Vitamin K	µg	0	135	500	RYGB		1000
Folate	µg	400	400	400			800
Iron	mg	70	14	23			45
Copper	mg	3	1	1			2
Zinc	mg	22,5	22,5	10			20
Nutrient intake at this dose is within guidelines							
Nutrient intake at this dose is below or above the level recommended in the guidelines							

Roux-en-Y gastric bypass (RYGB), Biliopancreatic diversion (BPD), BPD/duodenal switch (BPD/DS)

DEKAs prototype formulation clinically tested in RCT

Significantly better than the standard bariatric vitamin regime used at Johns Hopkins Center for Bariatric Surgery, Baltimore, USA ¹

Study outline

- DEKAs prototype formulation + calcium (n=29) was RCT-tested against the standard regimen (n=27, 2 multivitamins + 500 mcg B12 + iron + calcium) at Johns Hopkins, Baltimore, USA after Roux-en-Y Gastric Bypass Surgery.
- Mean BMI 47, mean age 42, 89% female patients.
- Plasma levels of vitamins A, D, E, folate, thiamine, vitamin B12, ferritin & iron, were measured preoperatively and 3 months postoperatively.

Main results for the DEKAs prototype group

- A greater percentage of optimal levels for the majority of vitamins and minerals.
- PTH (p=0,02), vitamin D (p=0,02), thiamine (p=0,01), folate (p=0,03) and beta carotene (p=0,04) improved significantly.
- Better initial taste (p=0,01)
- Better aftertaste (p=0,04)
- Greater satisfaction and compliance

What makes DEKAs Bariatric special

DEKAs Bariatric chewable tablets

CLINICALLY
TESTED DELIVERY
TECHNOLOGY

DEKAs has a unique delivery technology

- The delivery technology ensures enhanced absorption of fat-soluble vitamins and micronutrients.¹

DEKAs is guideline compliant: one dose covers all minerals and vitamins²

- The composition of DEKAs incorporates the latest consensus guidelines on bariatric surgery.³

DEKAs was clinically tested in RYGB patients and improved results in a meaningful way ⁴

- In a clinical study a prototype formulation of DEKAs Bariatric showed significantly better results than the standard bariatric vitamin used in the Johns Hopkins Center for Bariatric Surgery, Baltimore, USA ⁴

DEKAs is taste-optimized and contains no paraben, gluten, casein or lactose

- DEKAs is based on natural flavors.

DEKAs eliminates the risk of hypervitaminosis A

- Most of the vitamin A in DEKAs is given as β -carotene, which is a precursor to vitamin A and is converted by the body to vitamin A as needed. No risk of hypervitaminosis A.

1. EASL Clinical Practice Guidelines: Management of cholestatic liver diseases European Association for the Study of the Liver, Journal of Hepatology , Volume 51 , Issue 2 , 237 – 267. DOI: <http://dx.doi.org/10.1016/j.jhep.2009.04.009>
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4. Steele K, Peterson L, Papas K, et al. Efficacy of a chewable multivitamin/mineral supplement in preventing vitamin deficiency in Roux en-Y gastric bypass patients: A randomized controlled clinical trial. ASMBS Poster A6208, November 4-6, 2014.

Nutritional Information DEKAs Bariatric

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Nutritional Information Food for Special Medical Purposes

Ingredient	Unit	Quantity	% RI
Vitamin A 75% Beta-carotene, 25% palmitate	µg (IU)	1500 (5000)	75%
Vitamin B1 (thiamine)	mg	12,5	1136%
Vitamin B2 (riboflavin)	mg	1,7	121%
Niacin	mg	10	63%
Choline	mg	10	N/A
Pantothenic Acid	mg	10	167%
Vitamin B6 (pyridoxin)	mg	2	143%
Biotin	µg	300	600%
Folic acid	µg	400	200%
Vitamin B12	µg	500	20000%
Vitamin C	mg	45	56%
Vitamin D3	µg (IU)	62,5 (2500)	1250%
Vitamin E	mg (IU)	50 (75)	417%
Vitamin K1	µg	500	667%

Ingredient	Unit	Quantity	% RI
Iron	mg	22,5	161%
Chromium	µg	60	150%
Copper	mg	1	100%
Zinc	mg	10	100%
Selenium	µg	35	64%
Iodine	µg	75	50%
Manganese	mg	1	50%
Molybdenum	µg	25	50%
Magnesium	mg	25	7%
Calcium	mg	25	3%
Boron	mg	1	N/A
Sodium	mg	10	N/A
Coenzyme Q10	mg	5	N/A

* %RI = percentage of EU Reference Intake (adults)

Product Information DEKAs Bariatric

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Product information

Product information DEKAs Bariatric chewable tablets: DEKAs Bariatric chewable tablets, food for special medical purposes. For the dietary management of patients after Bariatric surgery. DEKAs Bariatric chewable tablets are a multivitamin and mineral supplement. DEKAs Bariatric chewable tablets contain higher amounts of specific fat and water-soluble vitamins as required by patients after Bariatric Surgery and as advised in treatment guidelines on Bariatric Surgery. DEKAs Bariatric chewable tablets utilize a clinically tested delivery technology to enhance absorption of fat-soluble vitamins and nutrients. **Important notice:** Use only under medical supervision. Cannot be used as a sole source of nutrition. Recommended for patients 18 years of age and older. The product poses a health hazard if consumed by persons who do not have the disease(s), disorder(s) or medical conditions for which the product is intended. Use during pregnancy and/or combined use with anticoagulants only after consultation with a doctor. **Use and storage:** Do not use if the seal is broken or missing. Keep out of reach of children. Store at room temperature. **Recommended dosage:** 1-2 chewable tablets daily as directed by physician. Take with meals. **Allergens:** none.

Ingredients DEKAs Bariatric chewable tablets: Sugar, dextrose, D-alpha-tocopheryl polyethylene glycol-1000 succinate (TPGS), sodium-L-ascorbate, magnesium glycinate, ferrous fumarate, calcium D-pantothenate, choline bitartrate, zinc bisglycinate, thiamin mononitrate, coenzyme Q10, pyridoxine hydrochloride, riboflavin, nicotinamide, copper citrate, sodium borate, manganese sulfate, phytomenadione, cyanocobalamin, beta carotene, folic acid, D-biotin, retinyl palmitate, potassium iodide, chromium chloride, cholecalciferol, sodium selenite, sodium molybdate, anti-oxidant (tocopherol-rich extract), acidity regulator (citric acid), anticaking agents (calcium silicate, silicon dioxide, calcium silicate, magnesium stearate), emulsifier (hydroxypropyl cellulose), natural flavours (peach, orange), natural flavor masking powder, sweetener (sucralose), humectant (sorbitol).