
Cardiovascular risk reduction after metabolic surgery

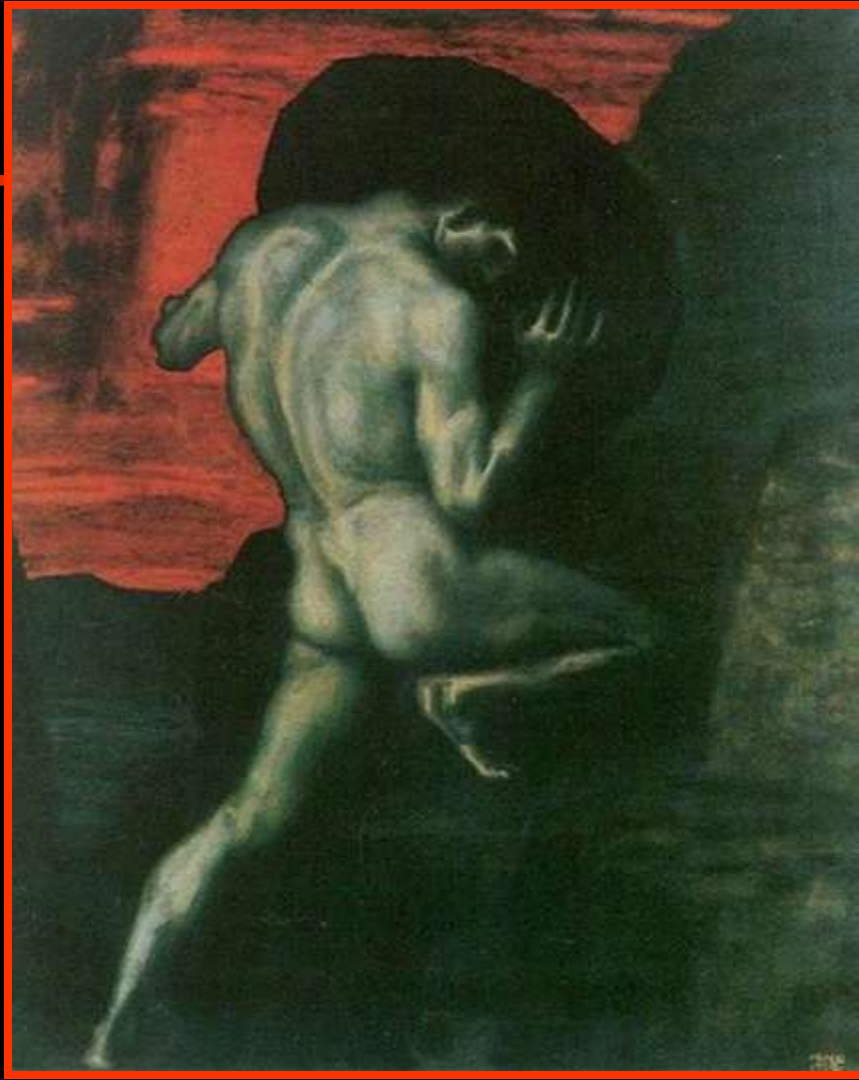


Carel le Roux
Diabetes Complications
Research Centre

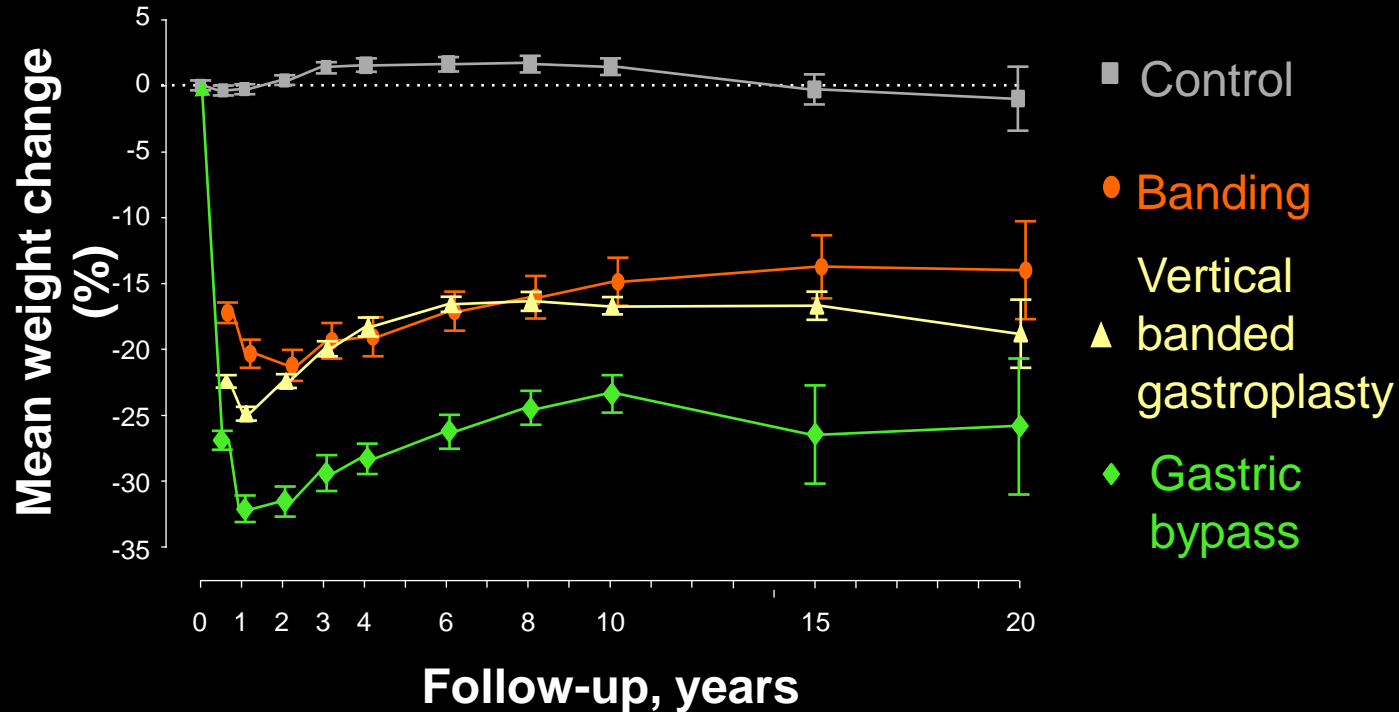
University College Dublin
Ulster University

Conflict of interest

Herbalife,
NovoNordisk,
Johnson & Johnson,
Keyron,
Covidien,
Fractyl,
GI Dynamics,
Roche,
AstraZeneca
Lilly
Boehringer Ingelheim

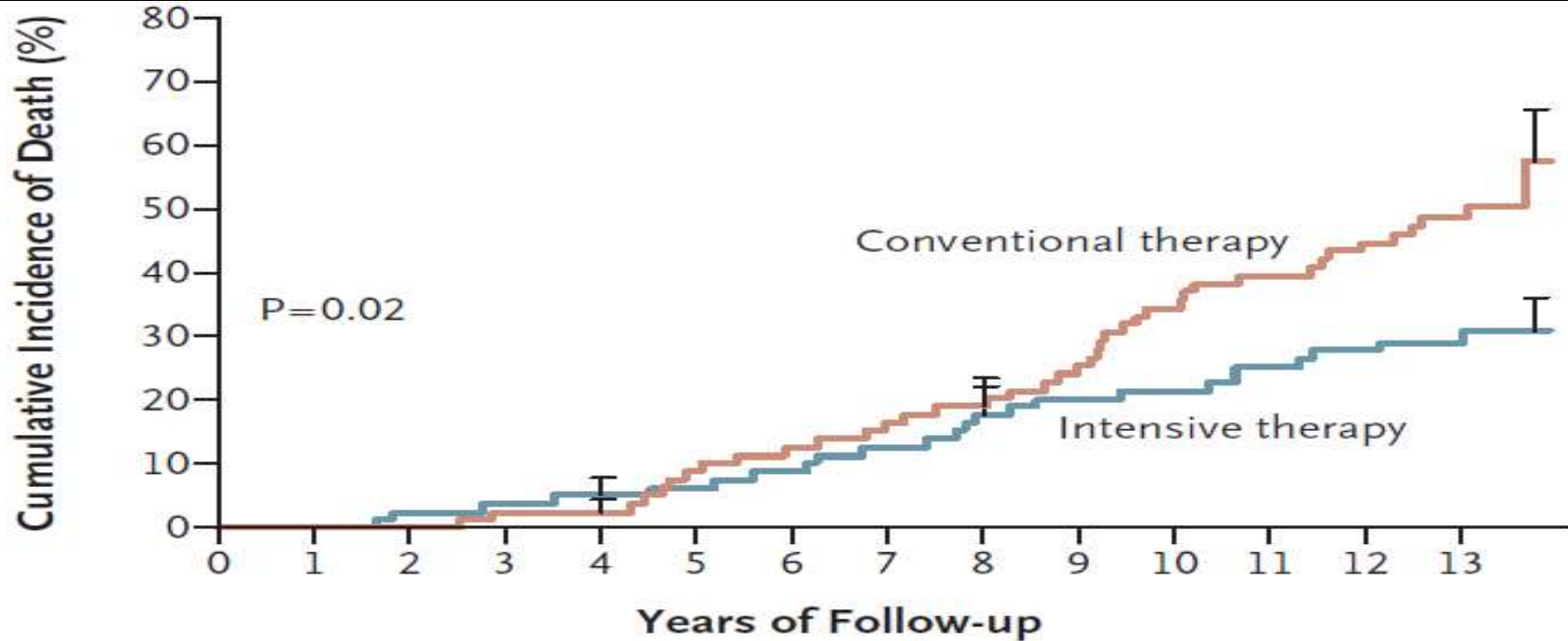


Body weight change: Swedish Obese Subjects study



STENO 2: the power of doing things together

Gaede NEJM 2008



P=0.02

Conventional therapy

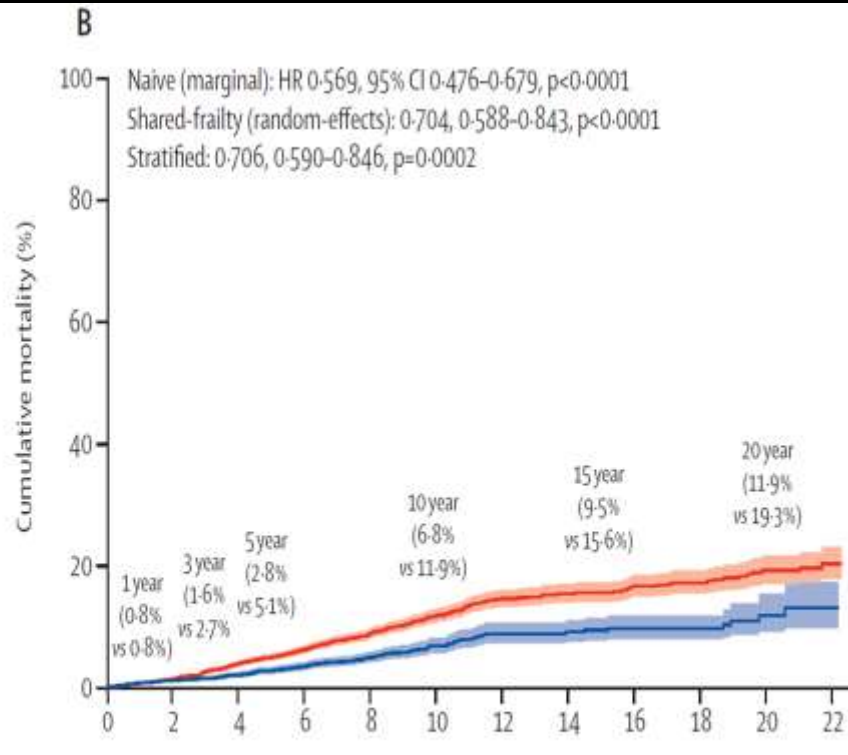
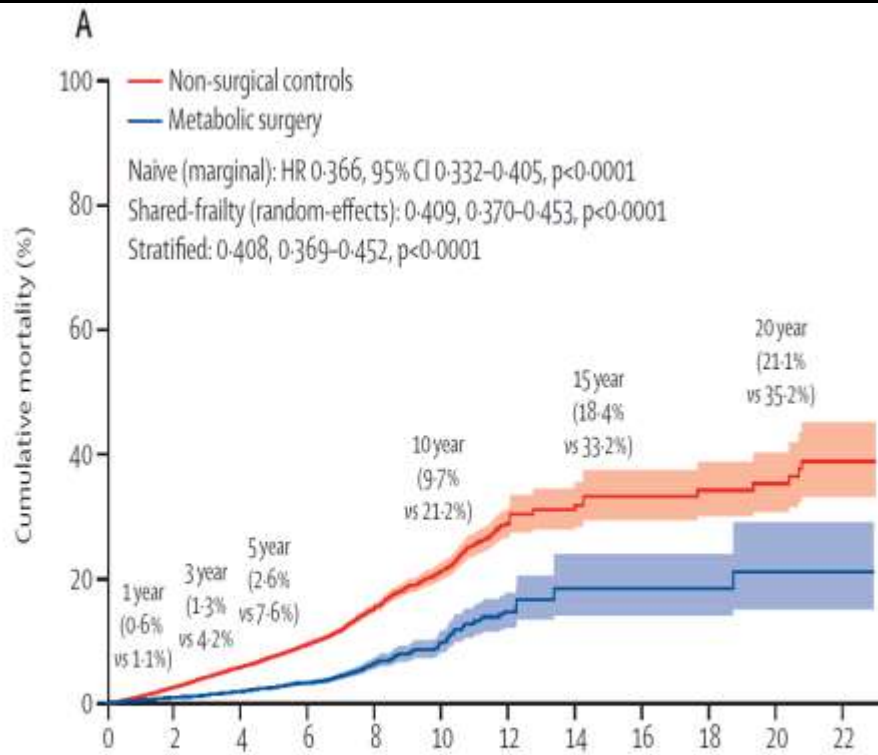
Intensive therapy

No. at Risk

Intensive therapy	80	78	75	72	65	62	57	39
Conventional therapy	80	80	77	69	63	51	43	30

Metabolic surgery and CVD meta-analysis of 174 772 participants

Syn and Cummings et al. Lancet 2021



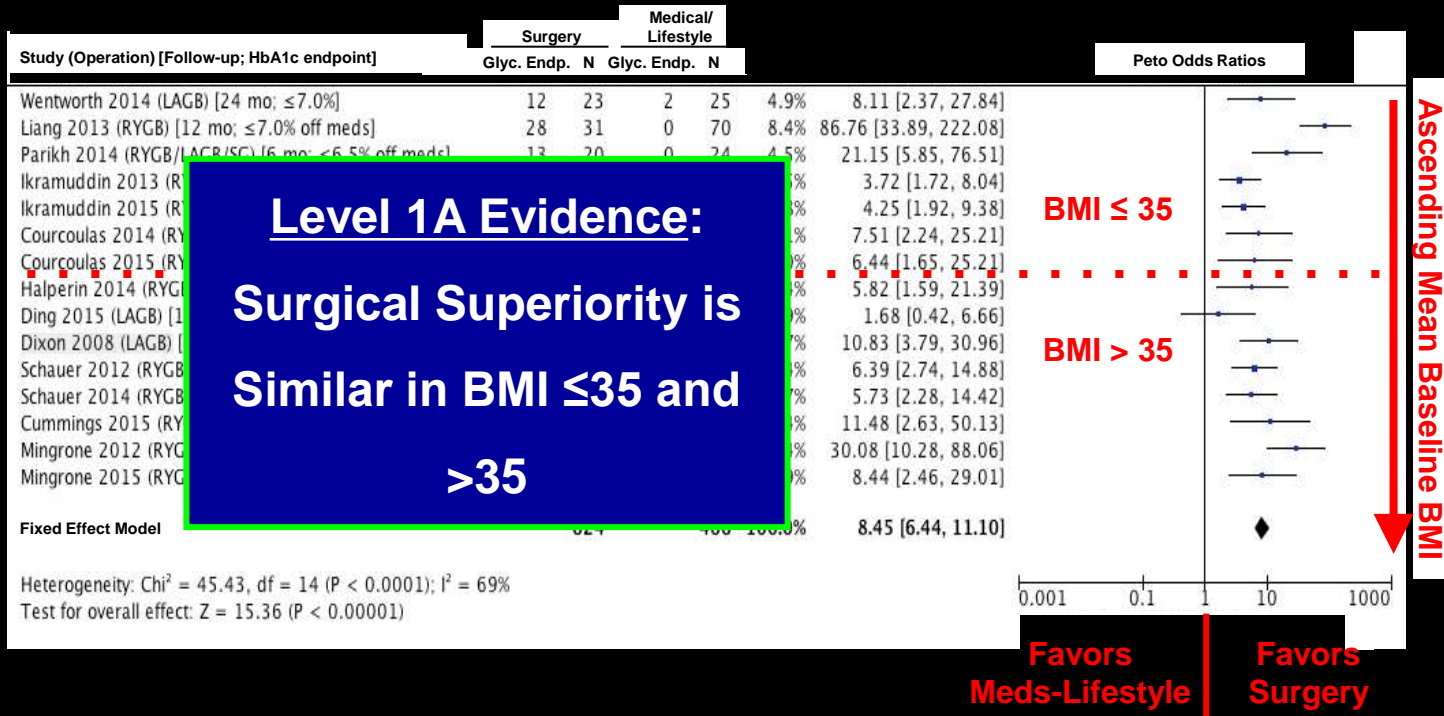
Number at risk

	0	2	4	6	8	10	12	14	16	18	20	22
Non-surgical	38 853	31 268	21 582	10 203	3 153	807	280	93	85	70	55	49
Metabolic surgery	16 190	13 187	8 825	3 985	1 333	394	206	45	42	34	25	24

Number at risk

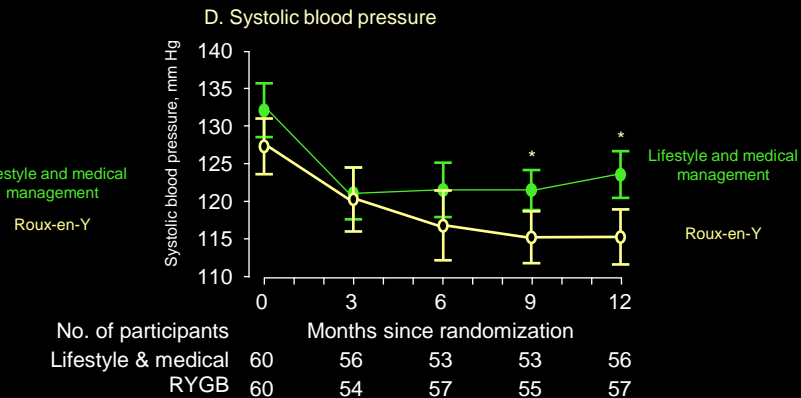
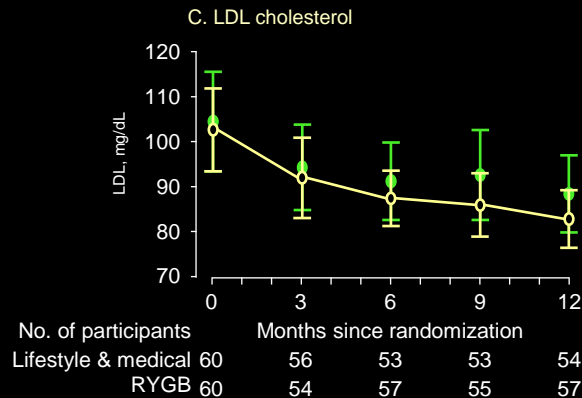
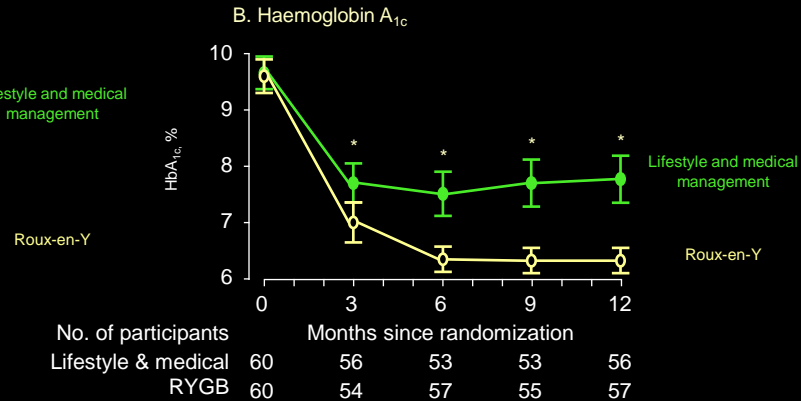
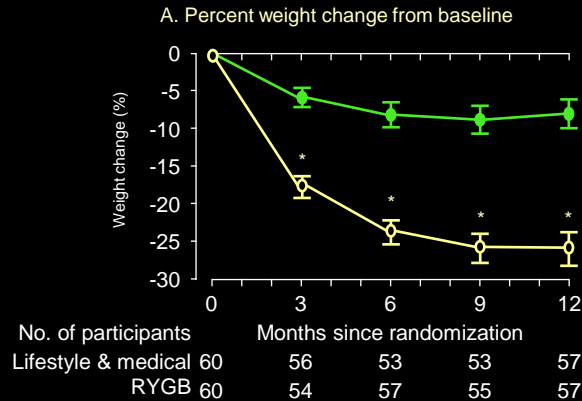
	0	2	4	6	8	10	12	14	16	18	20	22
Non-surgical	5 740	5 523	4 523	3 488	2 517	1 334	813	519	460	353	242	211
Metabolic surgery	3 256	3 140	2 670	2 066	1 431	618	429	317	273	180	87	59

Odds of Diabetes Remission or Glycemic Control in All 11 RCTs of Surgery vs. Meds/Lifestyle Care for T2DM



Changes in metabolic milieu after gastric bypass

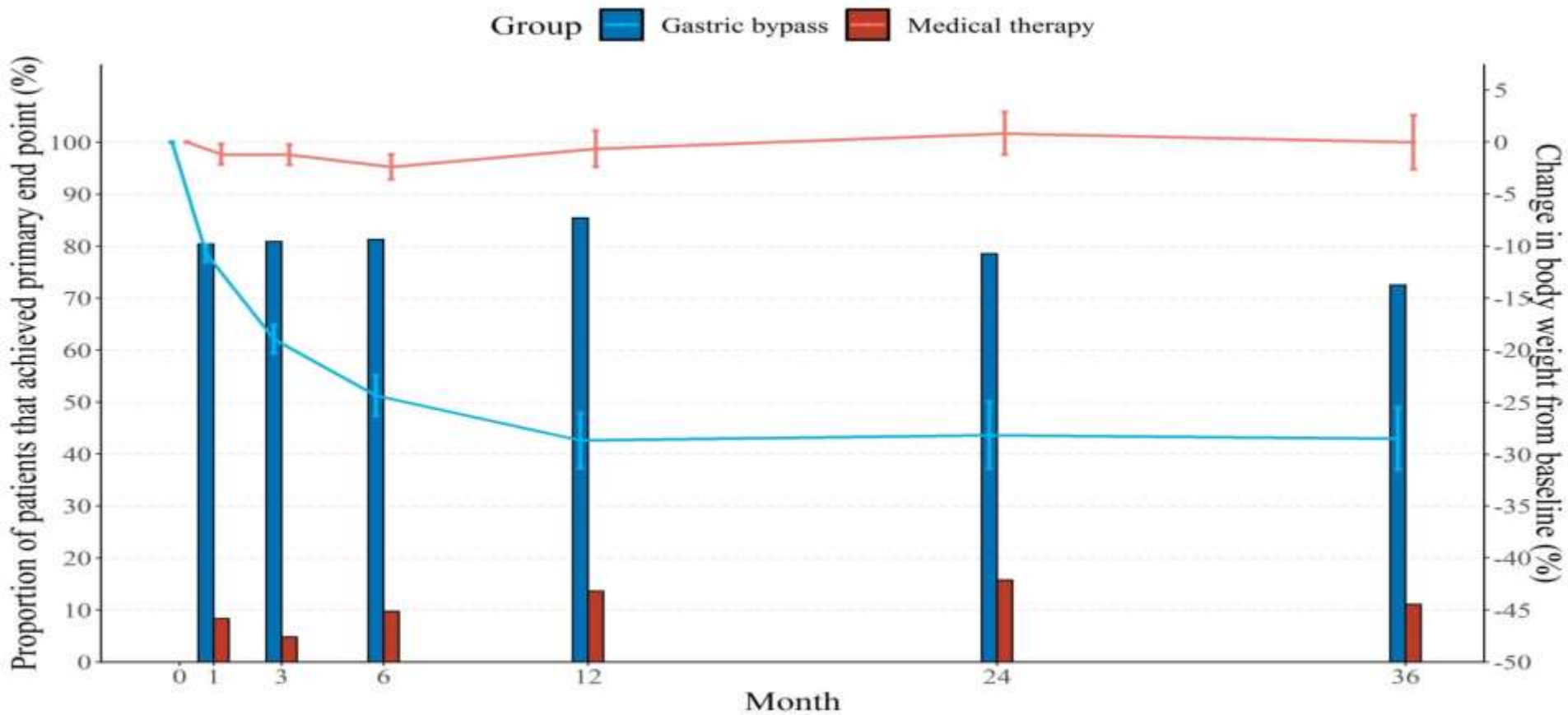
Ikramuddin S, et al. JAMA 2013; 309:2240–9.



*P-value for difference is <0.01

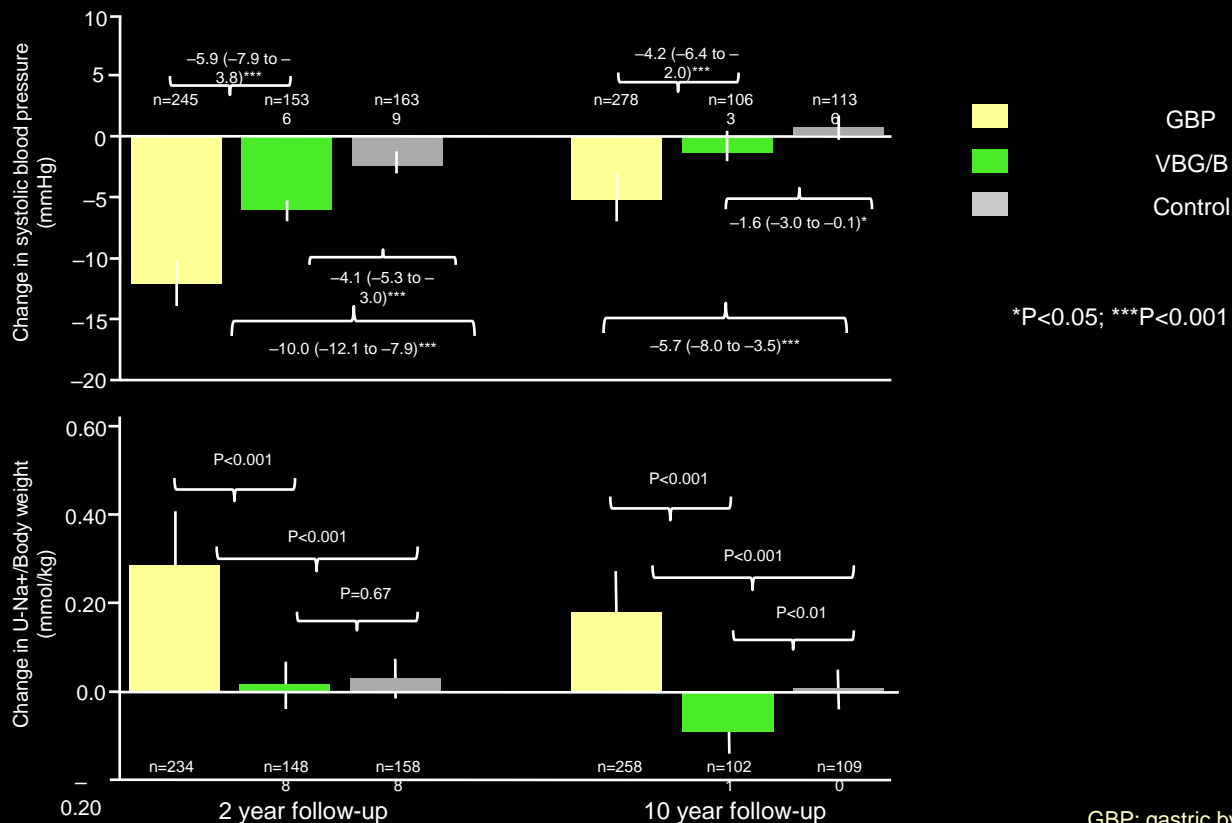
GATEWAY RCT: Improvement of hypertension after RYGB

Schiavon, Cohen et al Annals of Internal Medicine 2020



Blood pressure and urinary sodium excretion

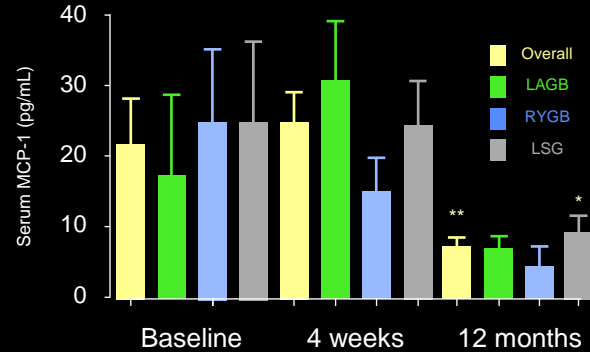
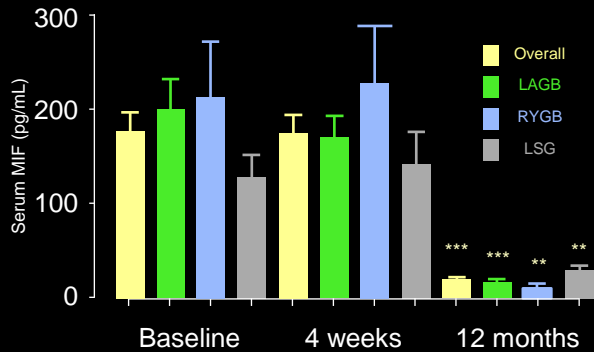
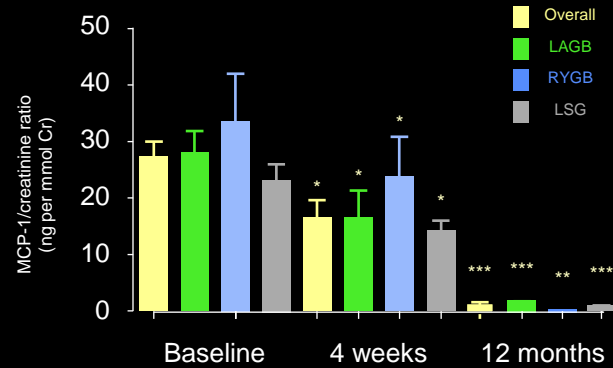
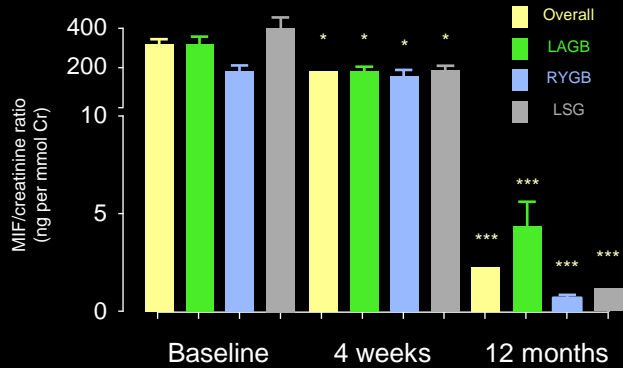
Hallersund P, et al. PLoS One 2012; 7:e49696.



GBP: gastric bypass
VBG/B: vertical banded gastroplasty or gastric banding

Urine markers of renal inflammation

Fenske WK, le Roux CW et al. Surg Obes Relat Dis 2013;9:559–68.



LIVE

Holistic Person-Centered Approach to T2DM Management





METABOLIC
MEDICINE

HEROES

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