



CENTRE HOSPITALIER
DE VALENCIENNES

Devenir des patients obèses traités par chirurgie bariatrique

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SERVICE DE CHIRURGIE VISCERALE ET DE L'OBÉSITÉ

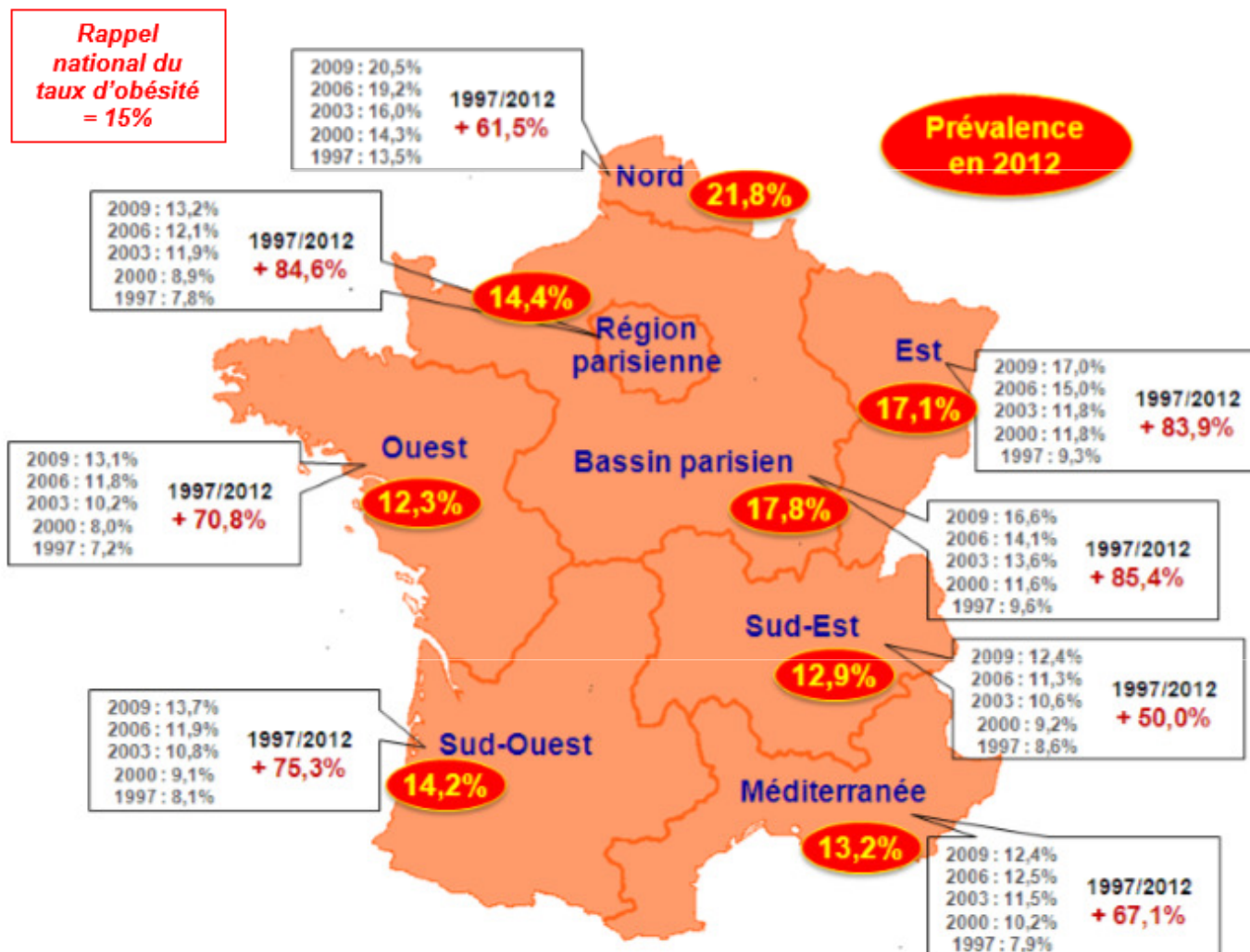
CENTRE SPECIALISÉ DE L'OBÉSITÉ (CSO)

CENTRE HOSPITALIER DE VALENCIENNES

JOURNÉE REGIONALE DES CLANS 13 JUIN 2014

Prévalence de l'obésité par région

ANALYSE PAR GROUPES DE RÉGIONS (RÉGIONS UDA8)



Source : Obepi 2012

L'obésité : une maladie

Chirurgie de l'obésité



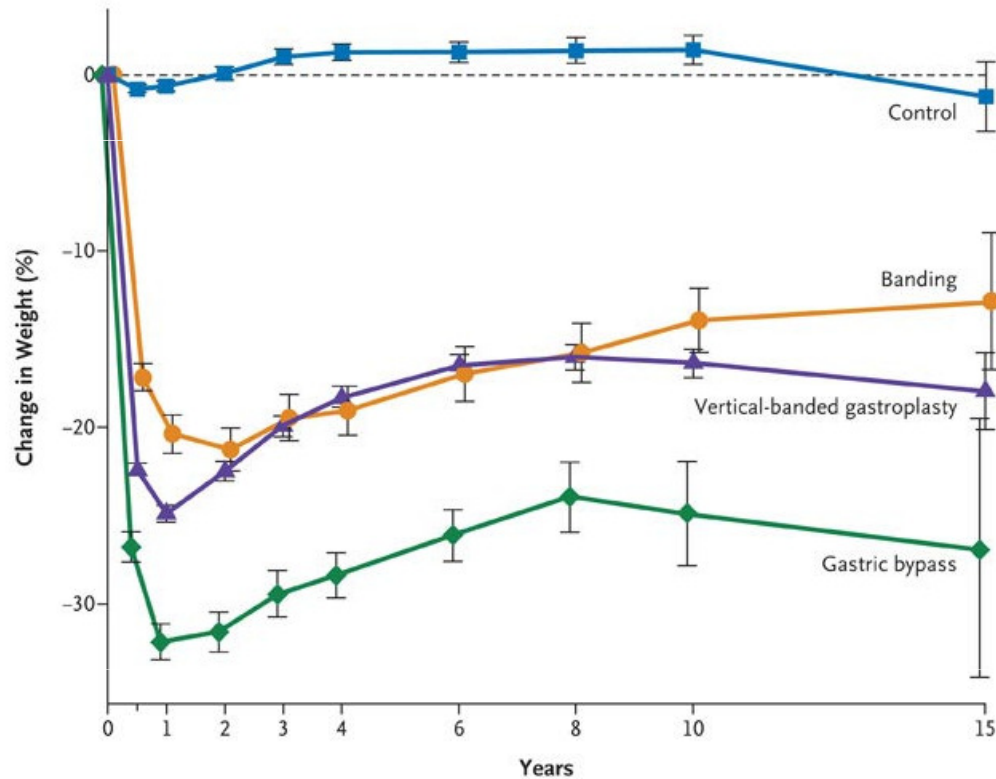
Chirurgie de l'obésité



“ Les indications de ces thérapeutiques symptomatiques agressives nous semblent devoir rester exceptionnelles, si d’aventure elles existent “

(Drouin Revue du Praticien 1976)

SOS STUDY

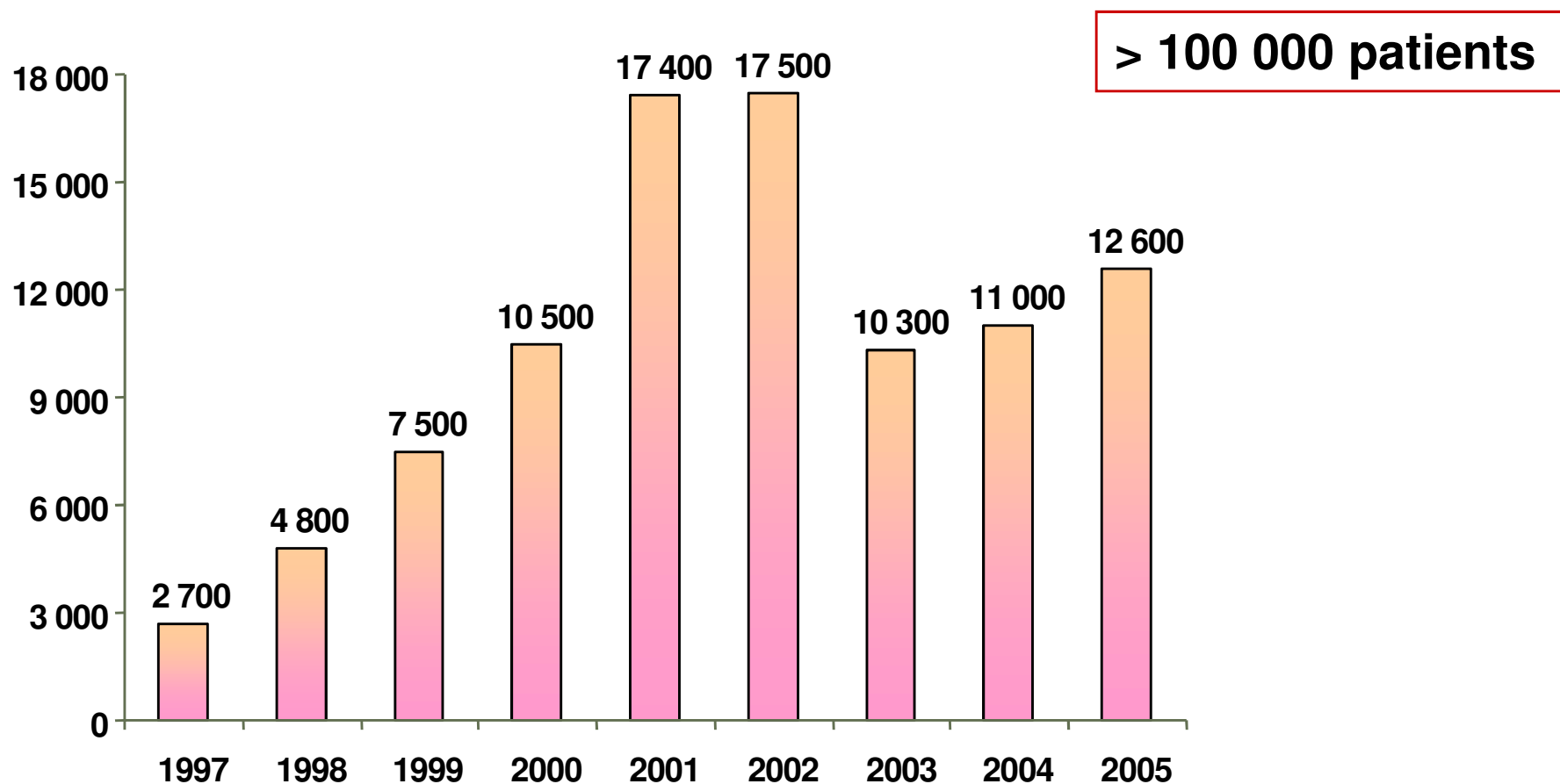


- 4027 sujets obèses
- 2010 opérés/2037 non opérés
- 10,9 années de suivi
- Patients opérés :
 - perte de poids -25% by-pass , -16% et -14%
 - gastroplastie et anneaux : -2% patients non opérés
- Réduction de la mortalité de 23% : infarctus et cancers
- NEJM august 2007

No. Examined

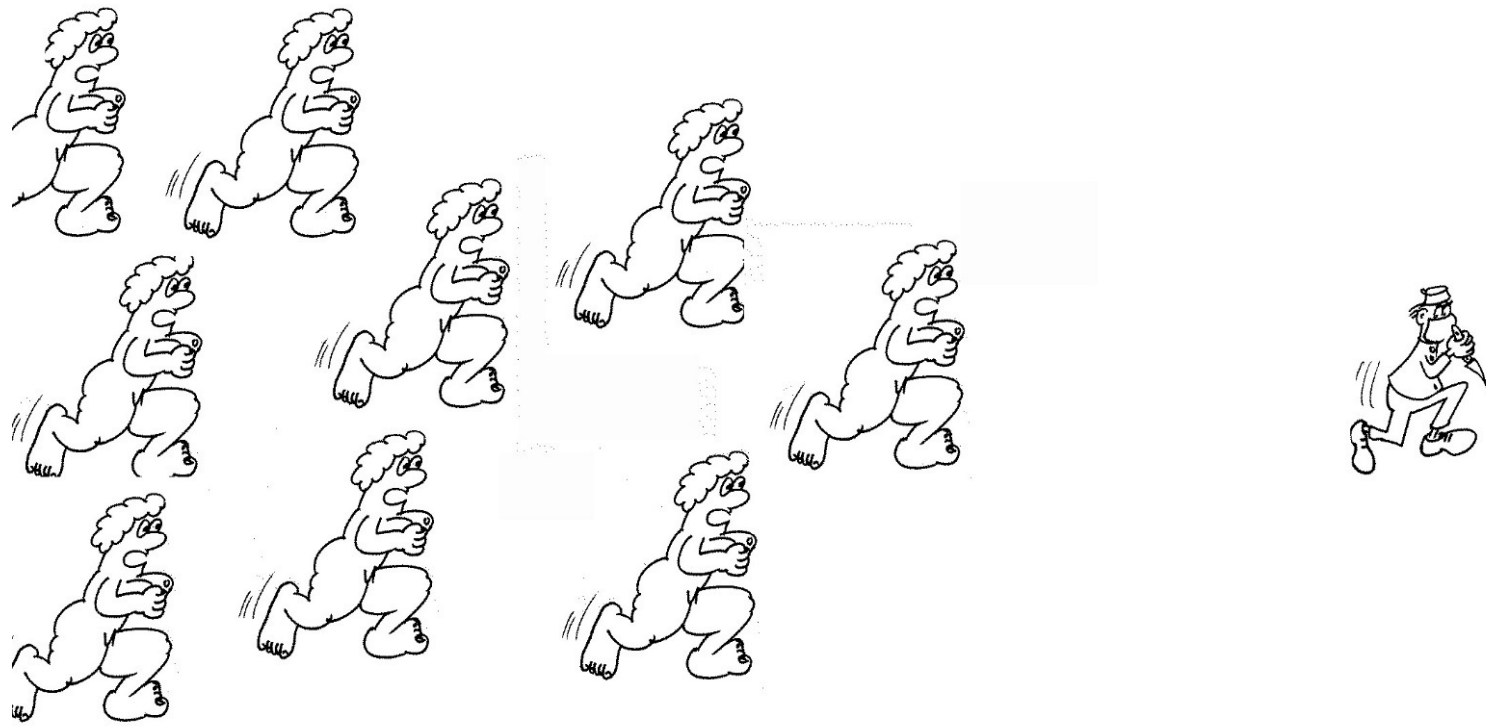
Control	2037	1768	1660	1553	1490	1281	982	886	190
Banding	376	363	357	328	333	298	267	237	52
Vertical-banded gastroplasty	1369	1298	1244	1121	1086	1004	899	746	108
Gastric bypass	265	245	245	211	209	166	92	58	10

Perspectives



Données PMSI, Oberlin 2007

2010 ...



Chirurgie de l'obésité, pour qui ?

Recommandations HAS 2009

- Patient obèse sévère (B.M.I ≥ 35) avec au moins 1 complication : HTA, SAS ,diabète, maladie ostéoarticulaire invalidante, NASH
- ou morbide (>40)
- Après échec de traitement médical nutritionnel, diététique et psychologique de 6 mois à 1 an
- Adulte avant 65 ans
- Information, évaluation, prise en charge multidisciplinaire préopératoire en liaison avec le médecin traitant
- Risque chirurgical acceptable
- Équipe chirurgicale entraînée

Les contre-indications à la chirurgie

- Maladies générales évolutives
- Affections psychiatriques non stabilisées
- Addictions (alcool, drogue)
- Troubles du comportement alimentaire
- Patient non autonome, isolé, suivi impossible
- Enfant
- Avis spécialisé, rôle de la concertation médico-chirurgicale de 2^{ème} recours au CHRU (Pr Pattou)

Le profil des patients opérés

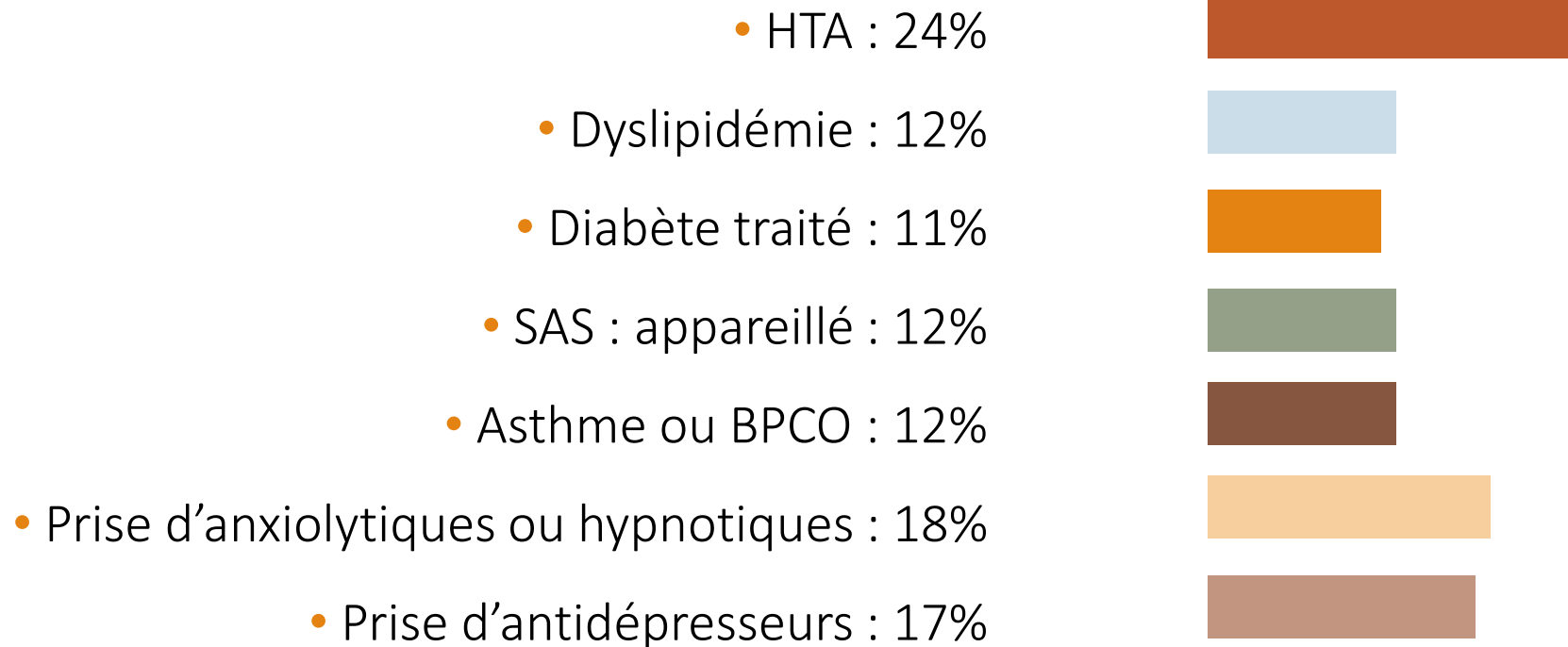
Enquête CNAMTS

30 442 patients opérés en 2011 (40 000 actuellement)

- 83% : femmes
- âge moyen : 39 ans
- 7/10 femmes et 8/10 hommes
- BMI > ou égal à 40
- 50% des femmes : en âge de procréer

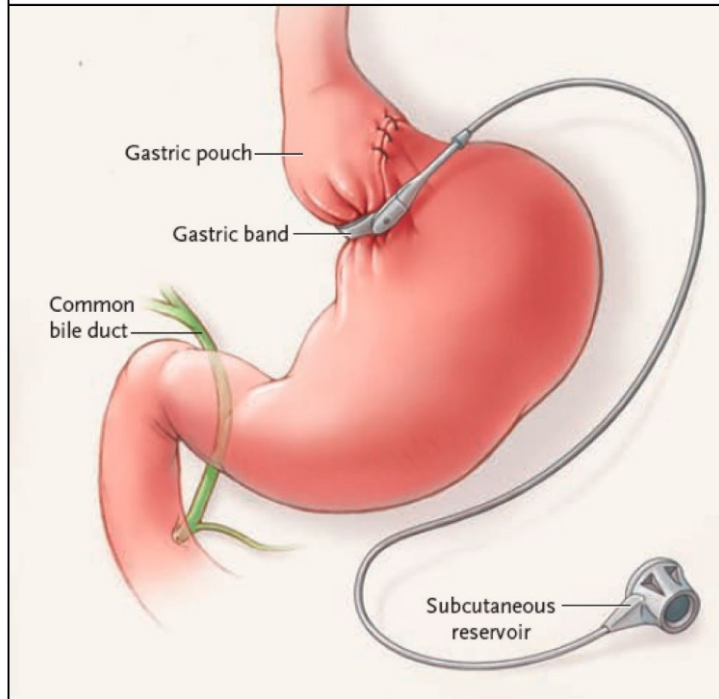
Les comorbidités des patients opérés

CNAM février 2013

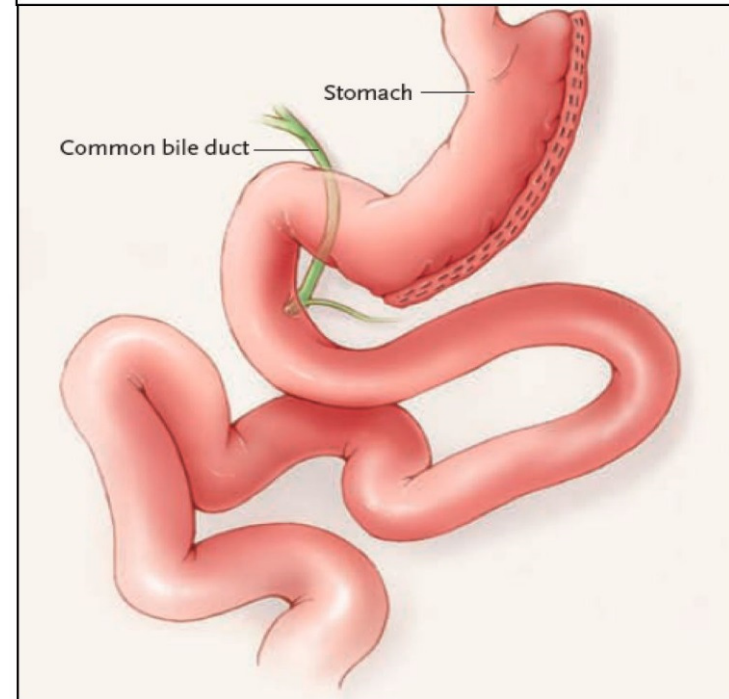


Chirurgie restrictive

Anneau gastrique

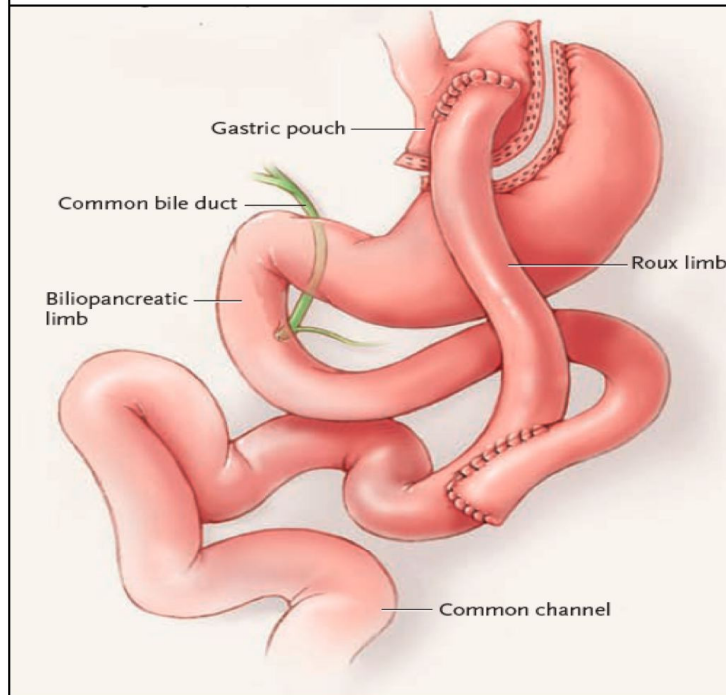


Sleeve gastrectomy

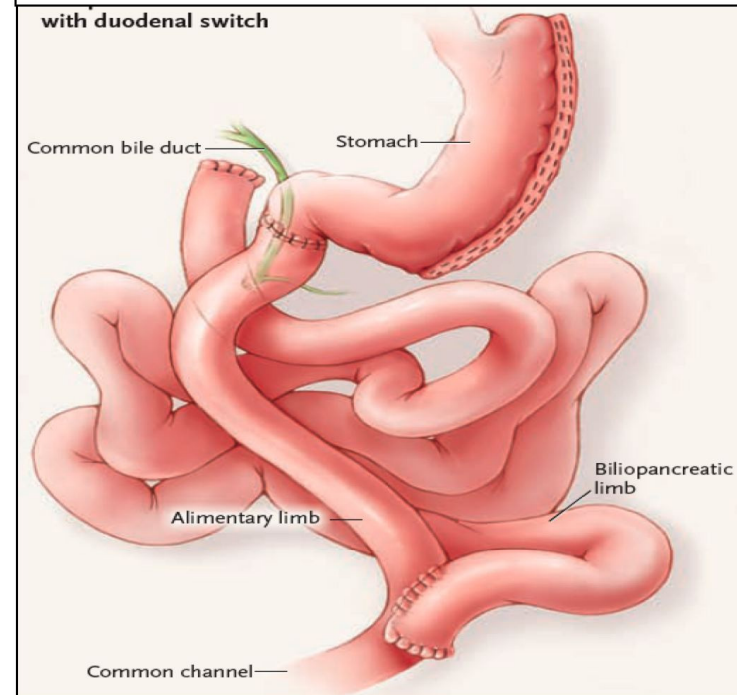


Chirurgie de malabsorption

Gastric bypass

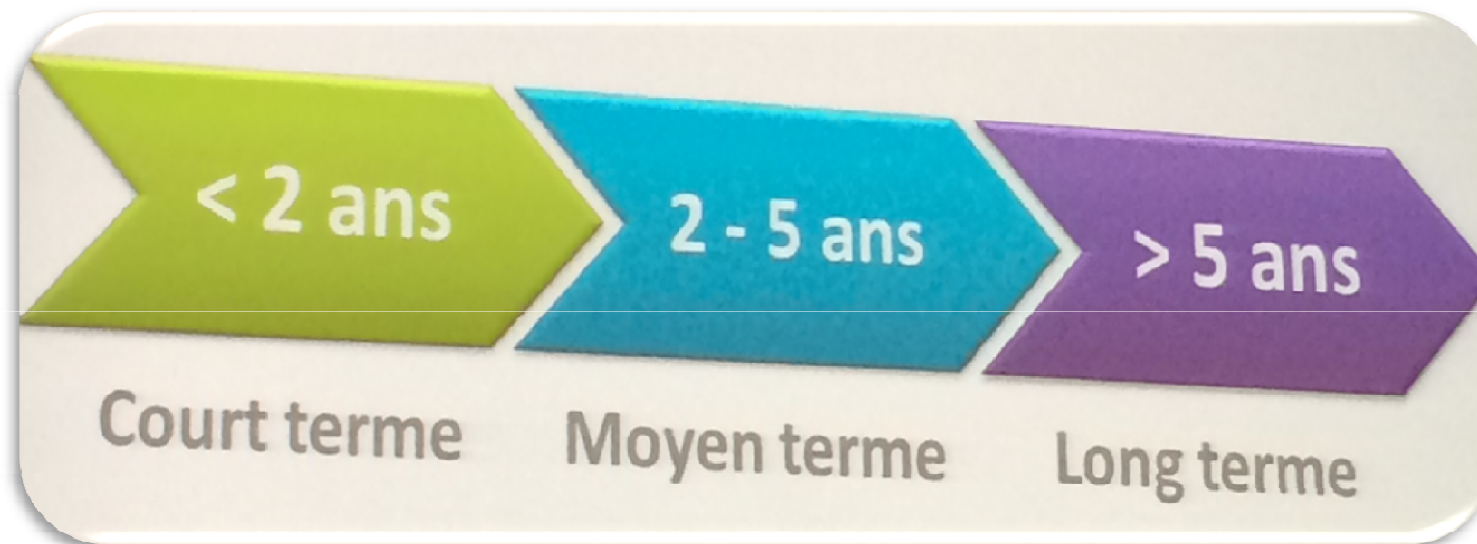


Dérivation bilio-pancréatique



Le devenir après chirurgie bariatrique

- Le moyen terme
- Le long terme

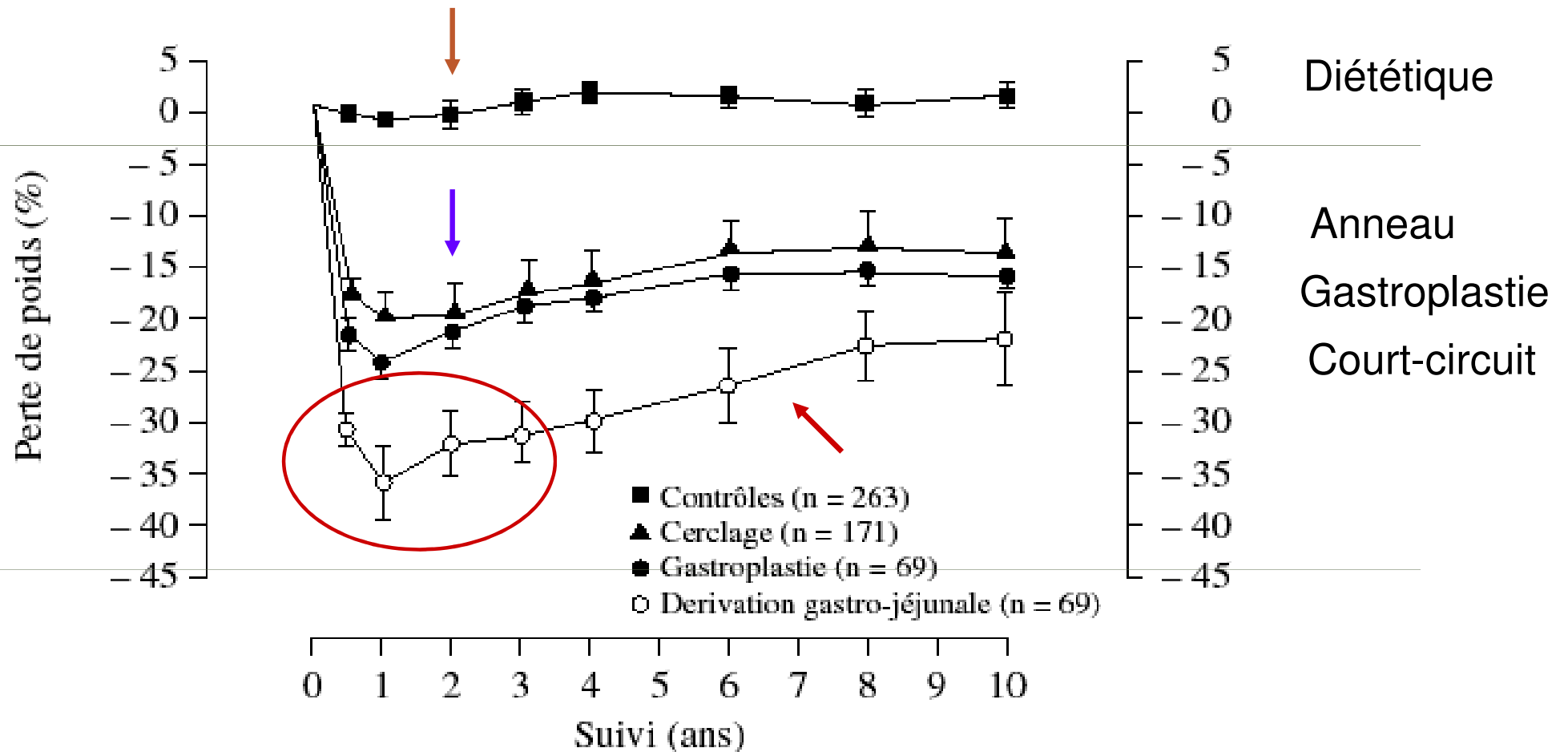


Bénéfices de la chirurgie

- Le poids
- La qualité de vie
- Les comorbidités: diabète, risque cardiovasculaire, SAS, NASH
- La grossesse après chirurgie bariatrique



Résultats pondéraux

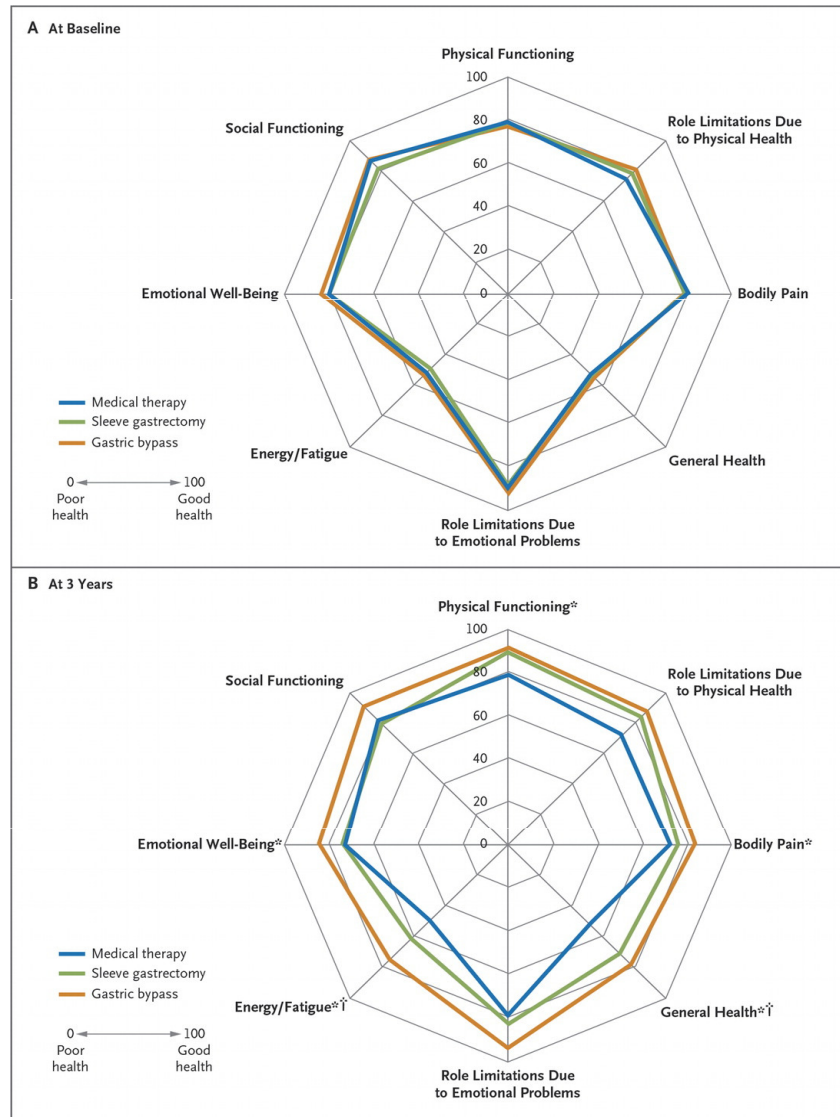


263 patients opérés / 80 % de suivi à 10 ans

Sojstrom NEJM 2004

Effets de la chirurgie sur qualité de vie et état psychologique-SOS Study

- Les scores de QdV s'améliorent parallèlement à la perte de poids, surtout pour l'aspect psycho-social.
- Ivresse de l'amaigrissement initiale mais pas d'amélioration significative des troubles de l'humeur à 10 ans.
- Anxiété pathologique des obèses opérés X2 / population de référence non-obèse (SOS Study).
- Risque de suicide majoré (dépistage des sujets à risque).



Schauer PR et al. N Engl J Med 2014;370:2002-2013.



Chirurgie métabolique ?

NEWSFOCUS

Bypassing Medicine to Treat Diabetes

By altering the gut's production of hormones, gastric bypass surgery may be able to eliminate type 2 diabetes. But scientists worry that this radical operation can also cause dangerously low blood sugar

In 1980, bariatric surgeon Walter Pories of East Carolina University School of Medicine in Greenville, North Carolina, performed his first gastric bypass surgery on an obese patient with type 2 diabetes, then a second, then a third. He noticed right away that the patients no longer needed insulin. Family doctors confirmed that what Pories had considered a transient phenomenon seemed like something more: Each person's diabetes had disappeared, even before they'd lost much weight. Pories was convinced that the doctors had erred. "I said, 'You guys don't know how to work up diabetes. Diabetes is an incurable disease.'" After the fourth patient, Pories and an endocrinologist took matters into their own hands. "We marched right down to the lab, very self-righteous," and accused the lab employees of incorrectly measuring blood sugar levels. ("If you're a doctor, you like to blame other people," Pories explains.)

As the number of patients with vanishing diabetes mounted, Pories recognized that the effect was real. Still, the concept that diabetes could be reversed surgically was so outlandish, he says, that "we didn't dare publish" the results. Instead, Pories began tracking his patients. In 1995, he reported in the *Annals of Surgery* that among 146 people with diabetes who had had the surgery in the past 14 years, 121, or 83%, had quickly become diabetes-free. The result was far superior to that achieved by any other treatment at the time—or now.

"The surgical world noted that paper," says endocrinologist David Cummings of the University of Washington, Seattle. But it took "another 10 years for the rest of us" to catch up, he says. Now, endocrinologists are beginning to pay close attention to the effects of gastric bypass surgery, which had long been a backwater of medicine, in part because obesity was not considered a genuine disease.

As America and other countries confront surging rates of obe-

sity, with few treatments that shrink the widest waistlines, the surgery's popularity is soaring. The most common form in the United States, Roux-en-Y gastric bypass, was performed on more than 120,000 people in 2007, according to estimates. That's almost double the number 5 years ago. Doctors often learn from their patients, and the hundreds of thousands of people who have had gastric bypass surgery are now prompting an overhaul in our understanding of metabolism and diabetes. Scientists are also going back to animals to figure out the impacts of the procedure. They are finding that the surgery's rerouting of the intestines and closing off of much of the stomach appears to have drastic effects on gut hormones and disease, independent of the weight loss that accompanies it.

These effects can also have dire consequences. Beginning in 2000, F. John Service, an endocrinologist at the Mayo Clinic in

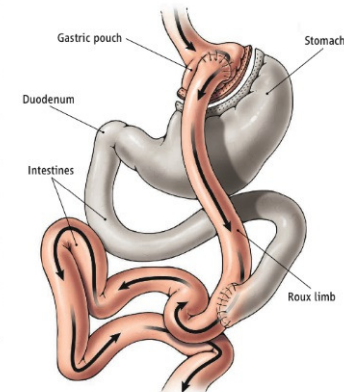
Rochester, Minnesota, began seeing patients with some alarming symptoms: confusion, abnormal behavior, seizures, and unconsciousness. In each case, the culprit was a low level of blood sugar that struck after eating, which is when it rises in healthy people. Every patient, it turned out, had undergone gastric bypass surgery months or years earlier. The Mayo Clinic now sees at least two new patients a month with this unusual hypoglycemia disorder, which was the topic of a meeting at the Joslin Diabetes Center in Boston earlier this month. "As a last resort, surgeons have removed part or even all of the pancreas, which churns out insulin, from many of these patients."

How to decipher and harness the surgery's metabolic effects is prompting much debate. On the one hand, some surgeons are already operating on less obese people with diabetes as a treatment for that disease. But others would prefer to wait until the science catches up, especially because the surgery isn't harmless, with a death rate ranging from 0.1% to 2%, depending on where it's performed. "Surgeons have for too long acted in a vacuum. ... Most of them aren't thinking about the mechanisms of what they're doing," says John Dixon, an obesity researcher at Monash University in Melbourne, Australia. "But we need to dissect out" what's happening in these patients.

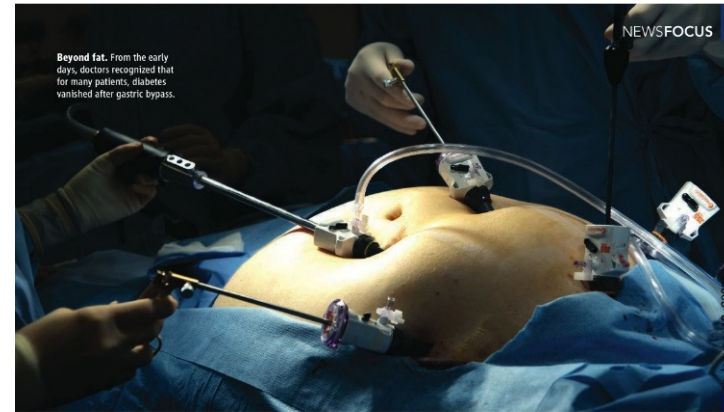
Early clues

Gastric bypass was inspired by similar intestinal operations employed for ulcers and gastric cancer that induced dramatic and enduring weight loss and were reported to reverse diabetes as far back as the 1950s. "As soon as we started doing the operation, we were aware of the fact that before the patients got out of the hospital, they no longer needed insulin," says Edward Mason, a retired surgeon from the University of Iowa in Iowa City who developed the procedure for weight loss. Most current forms of gastric bypass,

¹hypertensive hypoglycemia Following Gastric Bypass: Pathogenesis and Treatment Symposium, Boston, Massachusetts, 7 April.



Unintended effects. Roux-en-Y gastric bypass surgery reduces the stomach to a fraction of its original size and skips part of the small intestine, which causes profound metabolic changes in the gut.



and Mason's original operation, have one element in common: A newly created exit from the stomach is reconnected to a piece of small intestine a few feet lower down, "bypassing" the upper portion of the small intestine. In addition, the stomach is drastically restricted, by about 95%. (Another weight-loss surgery, gastric banding, seals off most of the stomach but leaves the intestines intact and is not considered gastric bypass.) Today, most gastric-bypass patients shed 30% of their body weight and keep it off.

Mason, now 87 years old, recalls that he and others explained away the reversals of type 2 diabetes because their patients weren't eating right after surgery, which would lower blood glucose levels and, in turn, their need for insulin. (The surgery does not have the same effect on type 1 diabetes, in which afflicted individuals cannot produce insulin.) But Pories's study years later slowly began to convince people that something more fundamental was occurring.

Almost a decade later, a second report strengthened the case. In 2003, Philip Schauer, a bariatric surgeon now at the Cleveland Clinic in Ohio, published follow-up data from 1160 obese people who in the preceding 5 years had undergone Roux-en-Y gastric bypass, which gets its name from a French surgeon who developed the technique. Of the 191 people with diabetes or impaired glucose metabolism who could be tracked down, 83%, precisely the figure reported by Pories,

no longer had the problem.

Although impressive, it's not yet clear if these success rates will hold up in clinical trials. These are "typically the observations of a single surgeon or group of surgeons" and "very anecdotal," says David D'Alessio, an endocrinologist at the University of Cincinnati in Ohio.

Getting at biology

After years of absence, science is slowly making inroads into gastric bypass surgery. "The development of the field was not based on real research," says Francesco Rubino, a bariatric surgeon at Weill Cornell Medical College in New York City. "That has tarnished the field somewhat."

Recently, however, a growing number of studies are suggesting that the surgery has a profound effect on gut hormones, which could explain its impact on appetite, diabetes, and the low blood sugar that's turning up. One of the first clues emerged in 2002, when Cummings looked into a well-recognized oddity: "that people would be compelled to sip milkshakes all day long," says Cummings. That's not what happens. Many move away from calorie-dense foods altogether.

Curious, Cummings began examining levels of ghrelin, a hormone produced mainly by the stomach that stimulates appetite. Most people have peaks and valleys in ghrelin levels throughout the day as they consume meals and then become hungry again. In those who've had gastric bypass, Cummings found, ghrelin levels in blood were low and changed little all day, suggesting that something about the surgery dampens ghrelin production and hence appetite.

The role this plays in diabetes resolution has not been firmly dug, and researchers are now more closely examining how gastric bypass affects other hormones. Rubino's work, for example, has focused on the intestines, which produce a different suite of chemicals and hormones from those the stomach churns out. In 1999, Rubino turned to rats to examine whether the surgery's effects on diabetes were due to calorie restriction and weight loss alone. He tried to tease apart distinct features of his "patients"—the rats, in this case—and different features of surgery. When performed on lean animals with type 2 diabetes, gastric bypass had the same positive effects on the diabetes as in obese ones, suggesting that weight loss was largely irrelevant. Furthermore, Rubino performed the

"Surgeons have for too long acted in a vacuum. ... Most of them aren't thinking about the mechanisms of what they're doing."

—JOHN DIXON, MONASH UNIVERSITY

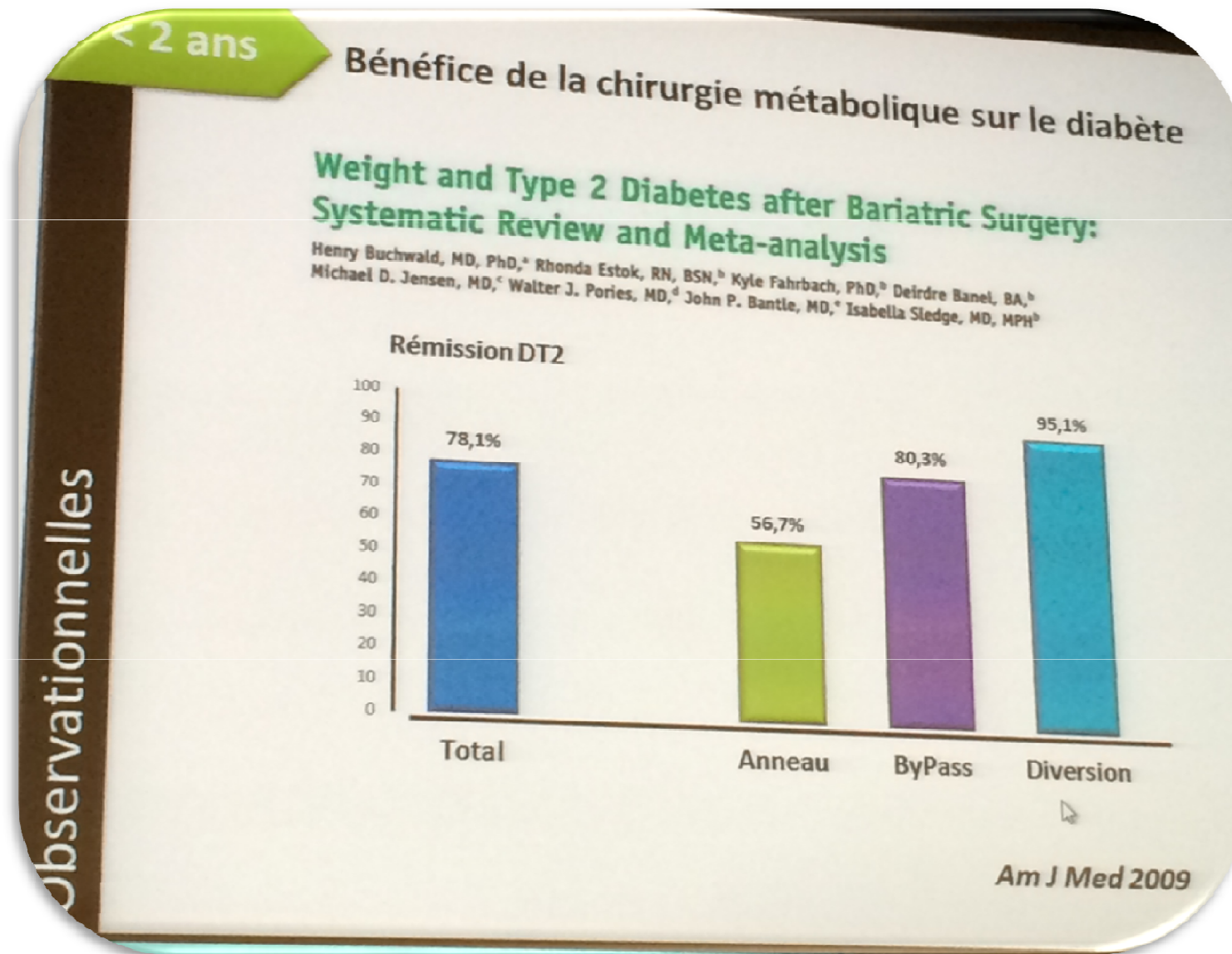
Downloaded from www.sciencemag.org on July 16, 2008

Résolution du diabète après chirurgie mal-absorptive

- Exclusion du segment duodéno-jéjunal: disparition spectaculaire du DT2 avant perte de poids
- ↑↑ GLP1 et PYY
- ↓ lipotoxicité foie et muscle(↓ TG et AGL)
- ↓ Inflammation chronique
- Restriction calorique intense

- Changement d'activité des afférences vagues digestives
- Modification de la flore intestinale
- Stimulation néoglucogenèse intestinale

Les différentes techniques de chirurgie bariatrique



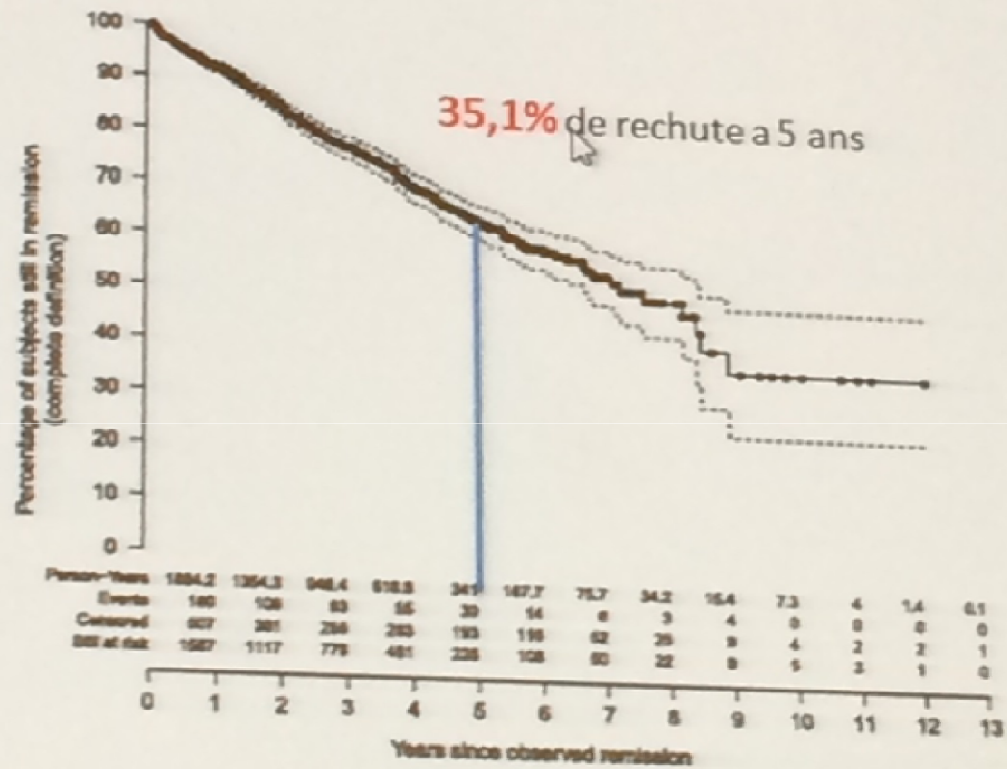
5 ans

A multisite study of long-term remission and relapse of Type 2 Diabetes mellitus following gastric bypass

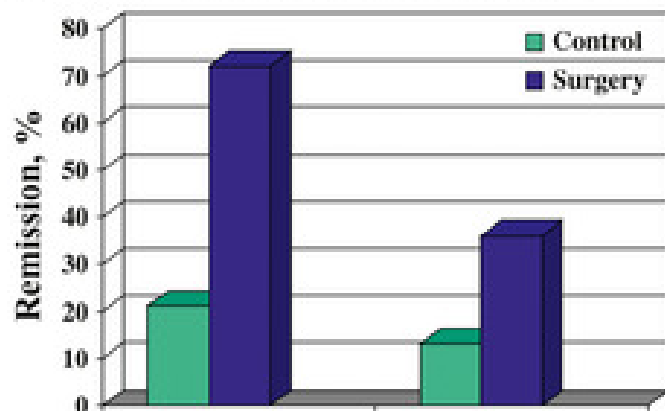
Arterburn et al. Obesity Surgery 2013 23; 93-102

2254 DT2 en rémission

% de patients toujours en rémission

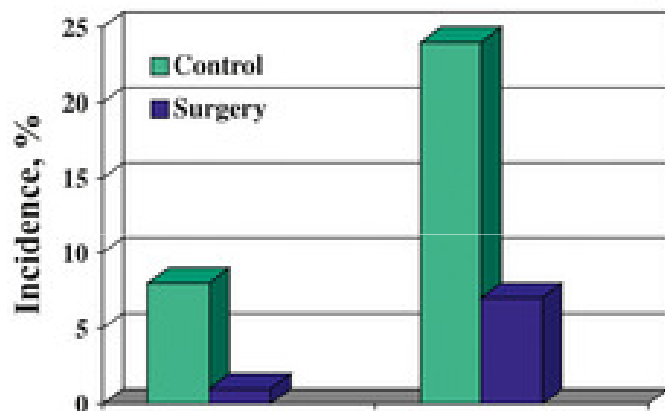


(a) SOS. Remission from diabetes over 2 and 10 years



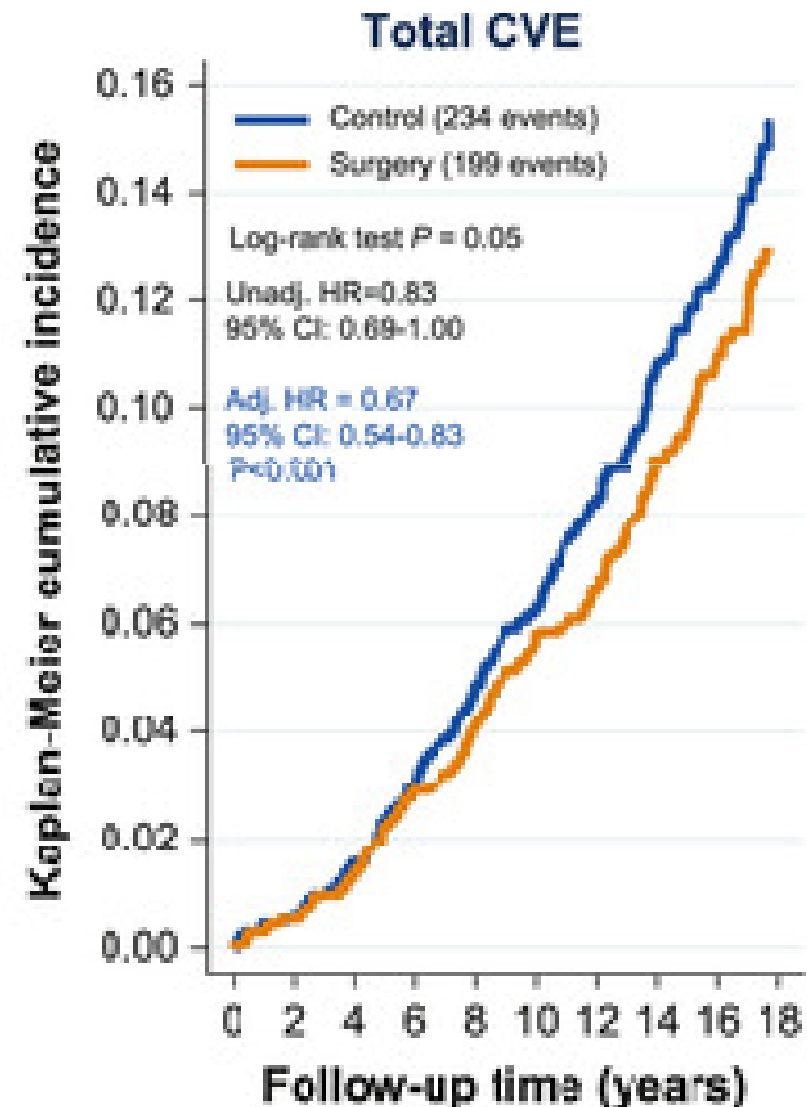
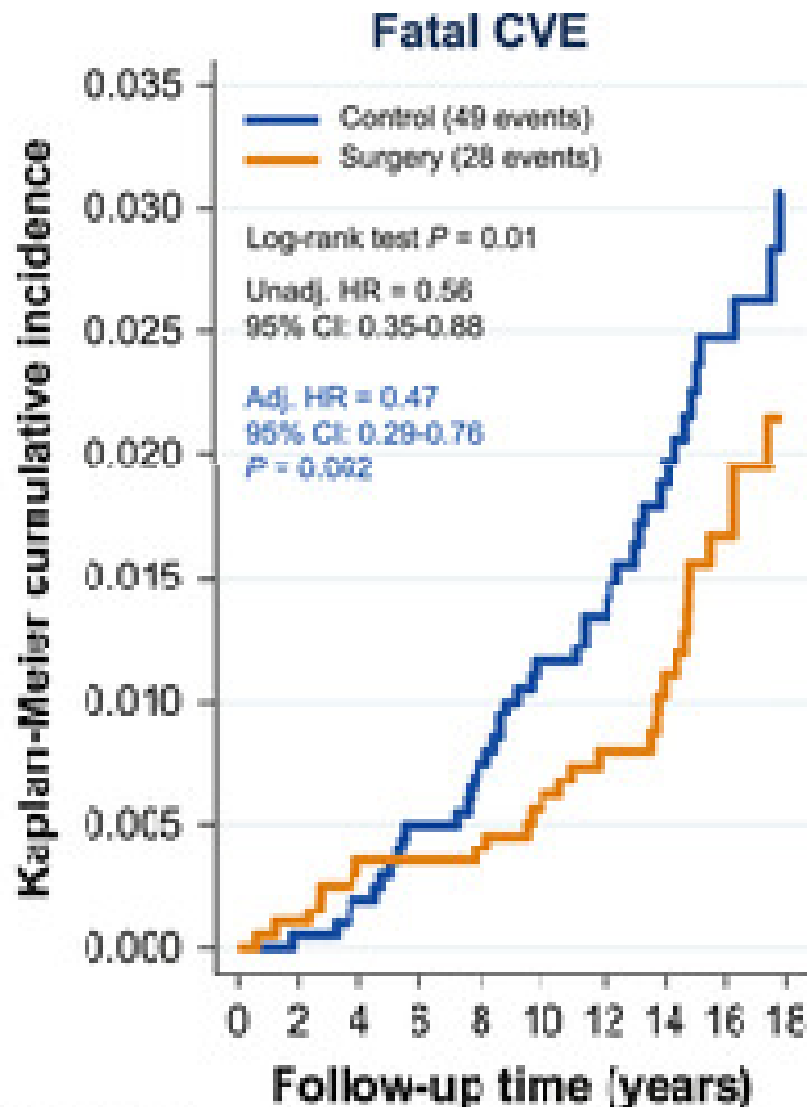
	2 year	10 year
Number of subjects:		
Control	248	84
Surgery	342	118
Adjusted Odds ratio	8.42	3.45
95% CI	5.68 - 12.5	1.64 - 7.28
P value	<0.001	<0.001

(b) SOS. Incidence of diabetes over 2 and 10 years



	2 year	10 year
Number of subjects:		
Control	1402	539
Surgery	1489	517
Adjusted Odds ratio	0.14	0.25
95% CI	0.08 - 0.24	0.17 - 0.38
P value	<0.001	<0.001

Source : Journal of Internal Medicine
[Volume 273, Issue 3](#), pages 219-234, 8 FEB 2013

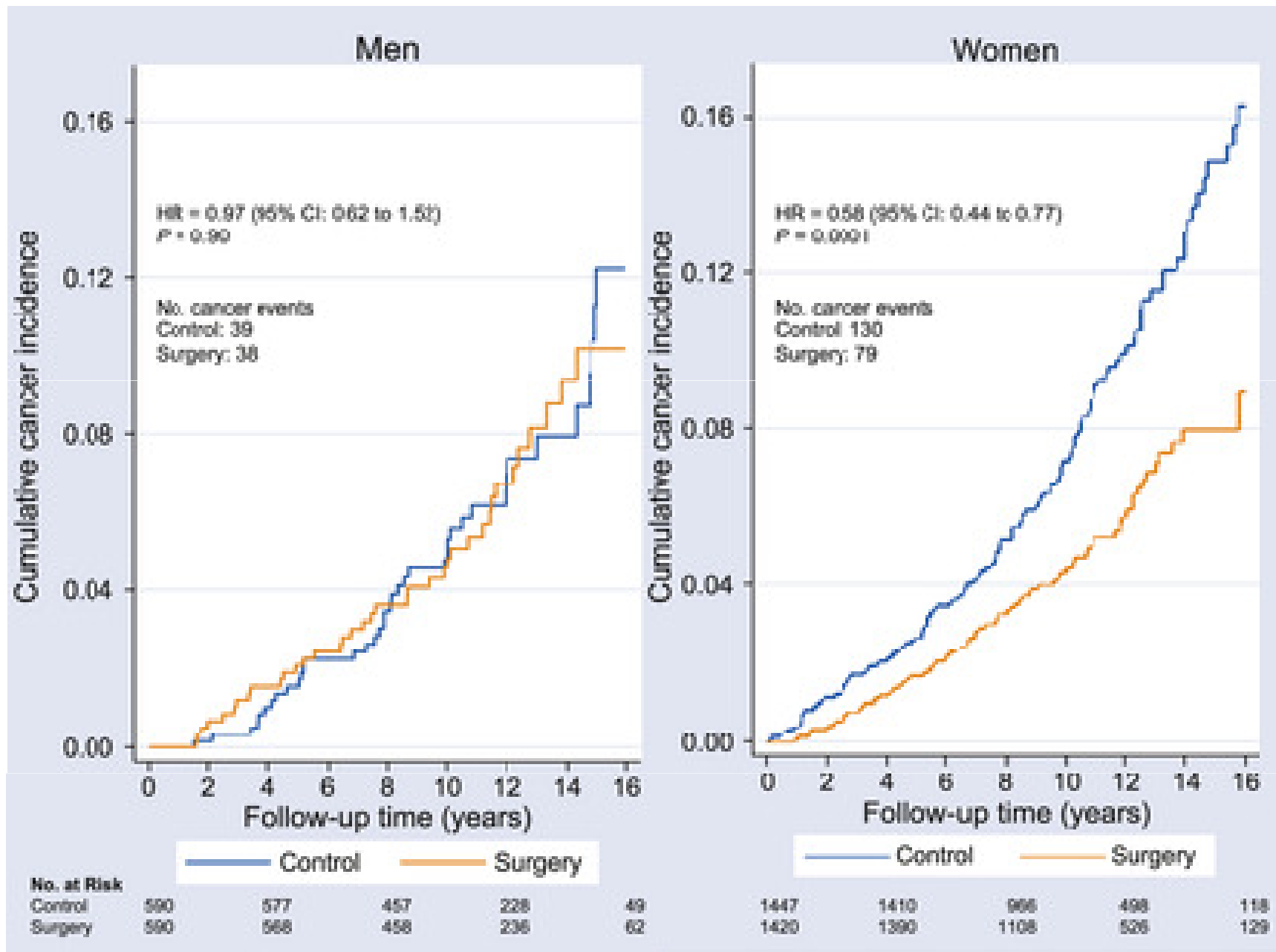


Number at risk:

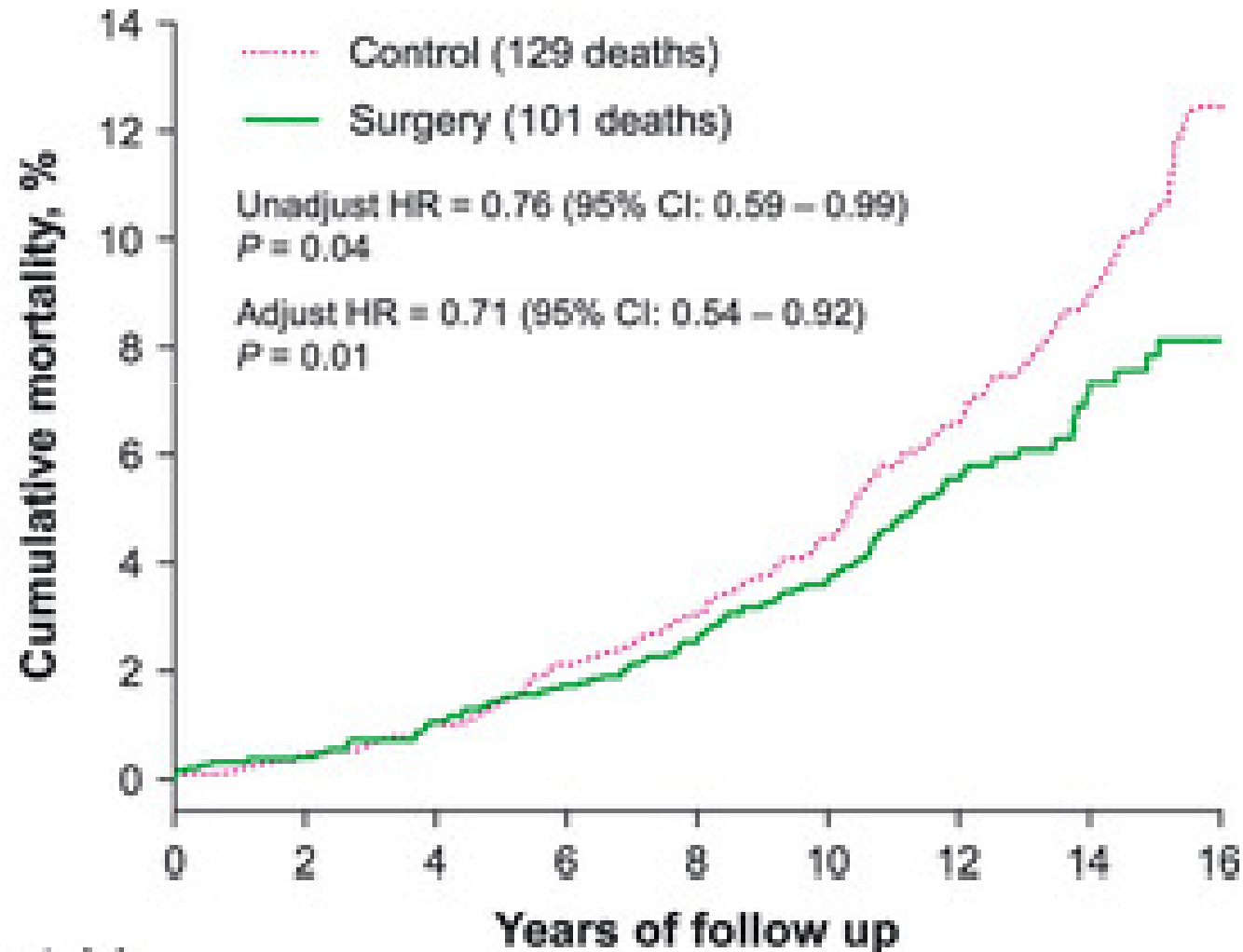
Control	2037	1993	1423	405
Surgery	2010	1970	1557	412

Control	2037	1945	1326	361
Surgery	2010	1921	1468	375

Source : Journal of Internal Medicine
[Volume 273, Issue 3](#), pages 219-234, 8 FEB 2013



Source : Journal of Internal Medicine
[Volume 273, Issue 3](#), pages 219-234, 8 FEB 2013



Number at risk

Surgery	2010	2001	1987	1821	1590	1260	760	422	189
Control	2037	2027	2016	1842	1455	1174	749	422	156

Source : Journal of Internal Medicine
[Volume 273, Issue 3](#), pages 219-234, 8 FEB 2013

Influence de la chirurgie sur les comorbidités (Schauer)

	Résolution	Amélioration	No change	Aggravation
HTA	36%	53%	9%	2%
CHOL	37%	41%	3%	1%
SAS	33%	41%	10%	1%
Neuropathie		50%		
Dys. érectile		18%		

La grossesse apres chirurgie bariatrique_

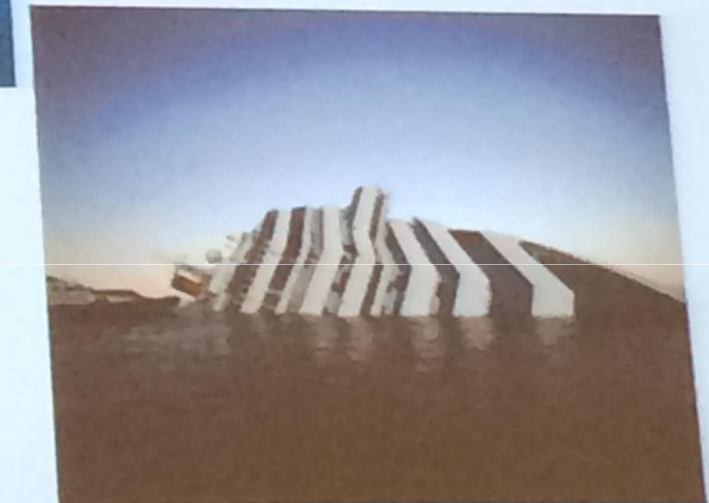
- Réduction de
 - macrosomie
 - HTA et prééclampsie
- >> **regles hygiéno-diététiques**
- Complications chirurgicales(anneau gastrique)
- Risque de malformations foétales(carences)
- Risque d'hypotrophie foétale (carences)
- Besoins vitaminiques et minéraux+++

Programmation et suivi intensif interdisciplinaire (gynécologue-chirurgien-nutritionniste)

- Réduction obésité de l'enfant de 52%

Oui, mais...

Oui, mais...

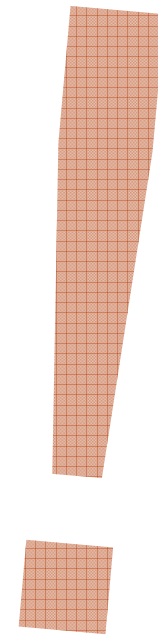


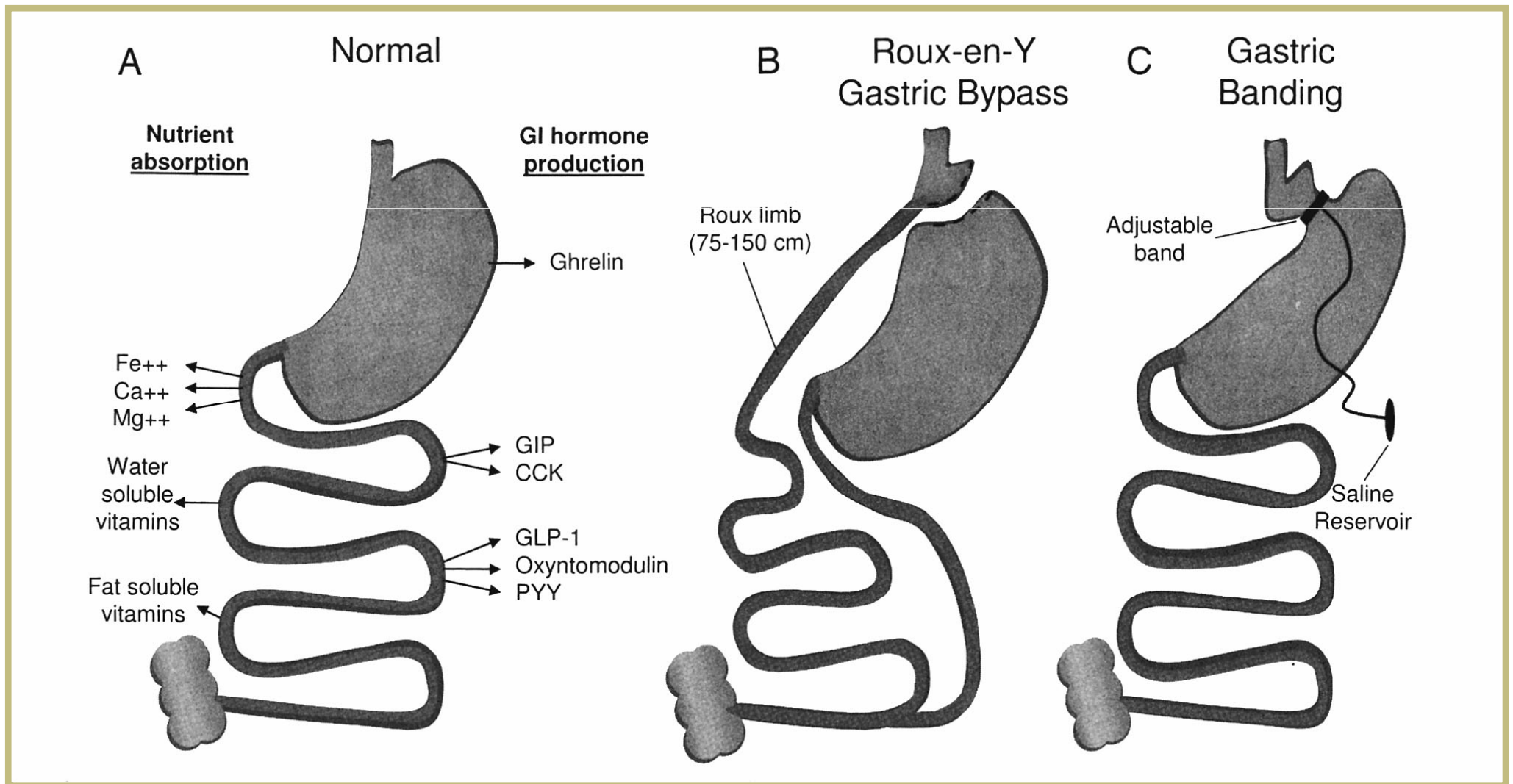
Complications tardives

- Glissement , migration de l'anneau, dilatation oesophagienne

Sténose anastomotique, perforation ou cancer de l'estomac exclus

- Hernie interne
- Lithiases vésiculaires
- Dénutrition
- Reprise de poids (TCA)
- Addictions: tabac, OH





Complications nutritionnelles à distance de la chirurgie

- Toutes les techniques sont concernées
- De la dénutrition protéique aux syndromes carenciels majeurs
- Risque majoré si une autre chirurgie (bariatrique, réparatrice ou autre)
- D'autant plus que perte de poids élevée (PEP)
- Comparable au grêle court (longueur de l'anse commune ?)
- Les bonnes indications au départ (TCA ?), l'ETP préchir
- Le suivi nutritionnel à vie

Suivi psychologique



Chirurgie bariatrique, lien avec alcool et tabac

Après By-pass l'éthylémie monte plus haut

Le risque de dépendance est triplé à 15 ans

Déplacement des troubles du comportement alimentaire sur l'alcool?

Reprise du tabagisme après sevrage :85%, (Quillot, 2014)

« La renaissance »

Propos des patients... oui, mais si...

Respect des indications de la chirurgie (HAS)

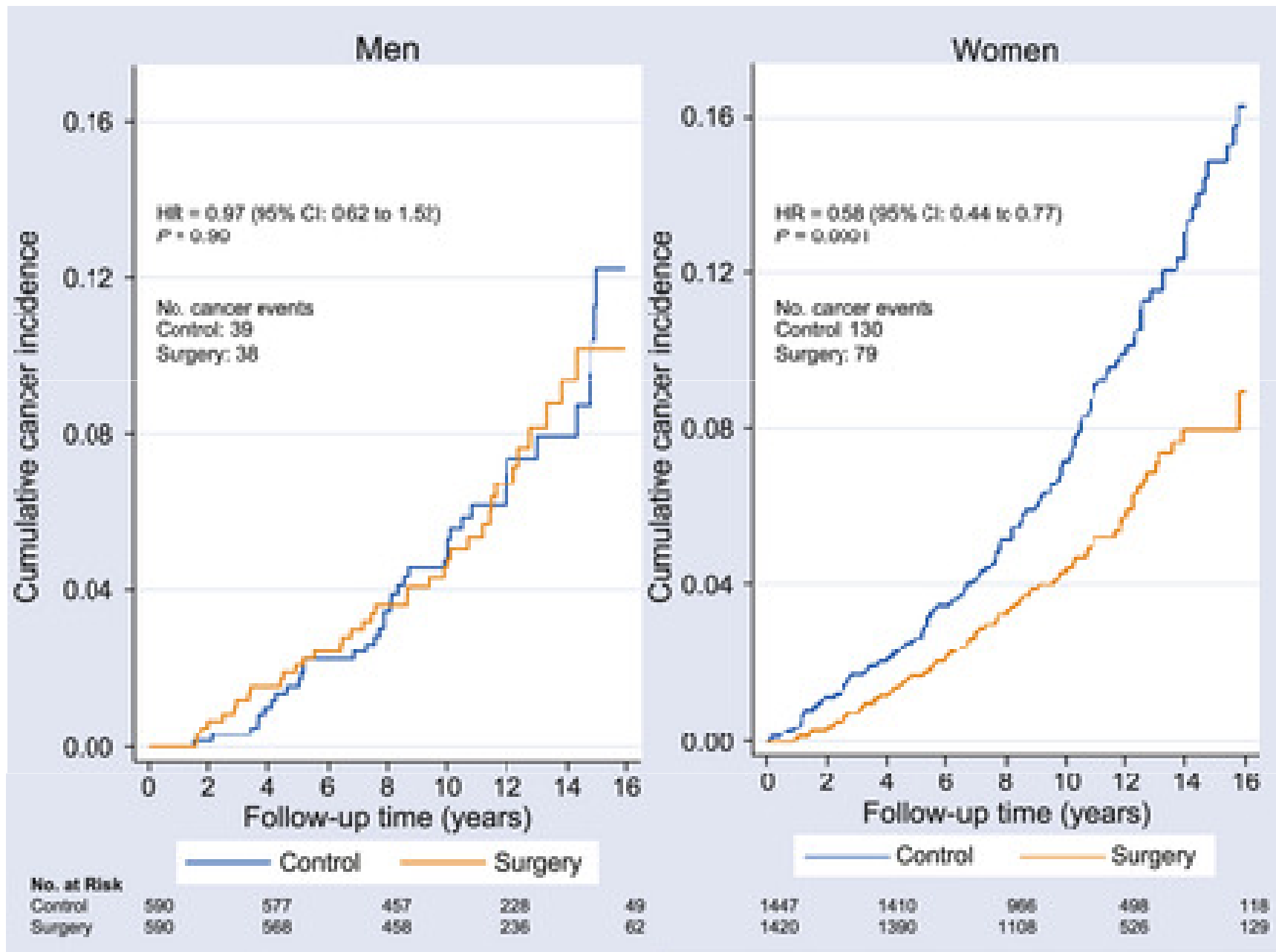
Préparation: éducation thérapeutique

Le suivi interdisciplinaire, à vie: chirurgien, nutritionniste , diététicien, psychologue, médecin traitant

La place des associations de patients (Reso59)

Merci

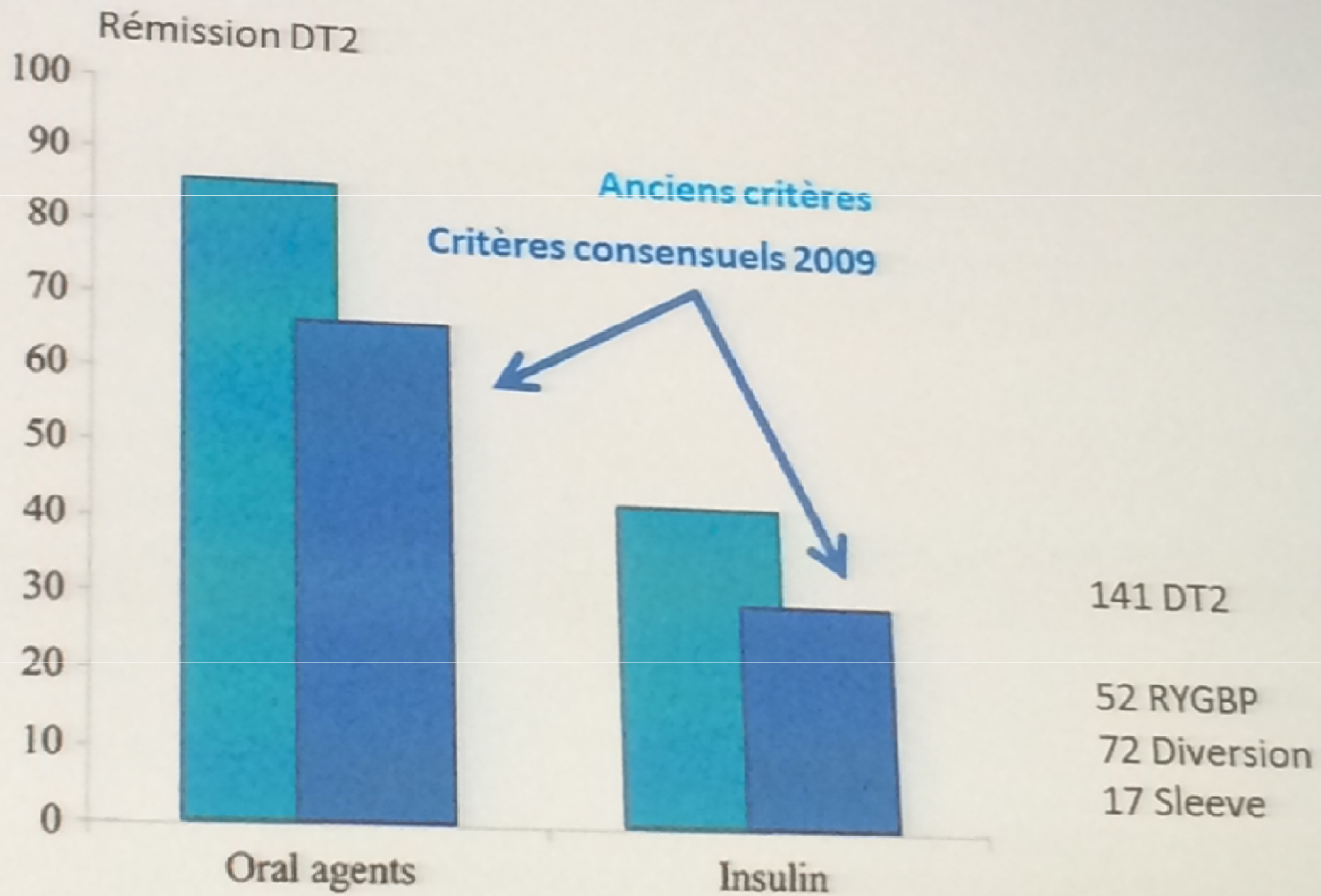
Conflit d'intérêt: Novartis



Source : Journal of Internal Medicine
[Volume 273, Issue 3](#), pages 219-234, 8 FEB 2013

< 2 ans

Les résultats de la chirurgie métabolique compromis par les critères de rémission du diabète ?



Ramos-Levy et al, Obes Surg 2013; 23: 1520

2 - 5 ans

Bariatric Surgery versus Intensive Medical Therapy for Diabetes - 3-Year Outcomes

Pr Philip Schauer et al.



NEJM- March 2014

150 H et F Diabétiques type 2
BMI 27 a 43 (36% avec BMI<35)
Age 20 -60 ans
HbA1c initiale 9,3%

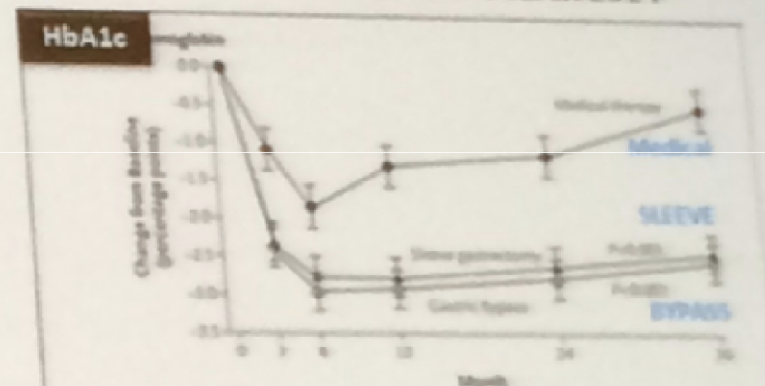
Endpoint HbA1c ≤6% 3 ans

50 ttt med intensif seul → 5%

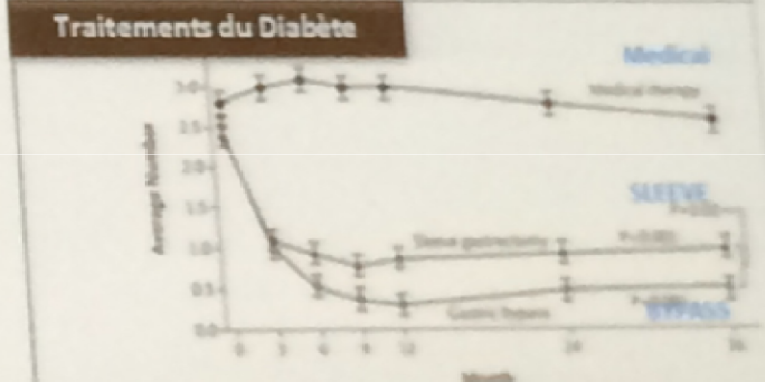
50 ttt med intensif + RYGBP → 38%

50 ttt med intensif + Sleeve → 24%

91% de follow-up



Visit	Medical therapy	Sleeve gastrectomy	Gastric bypass
0	9.3	9.3	9.3
3	8.8	8.5	8.5
6	8.8	8.5	8.5
12	8.8	8.5	8.5
24	8.8	8.5	8.5
36	8.8	8.5	8.5



Visit	Medical therapy	Sleeve gastrectomy	Gastric bypass
0	2.8	2.8	2.8
3	2.8	1.4	1.4
6	2.8	1.0	1.0
12	2.8	1.0	1.0
24	2.8	1.0	1.0
36	2.8	1.0	1.0

randomisées

2 - 5 ans

Bariatric Surgery versus Intensive Medical Therapy for Diabetes - 3-Year Outcomes

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NEJM- March 2014

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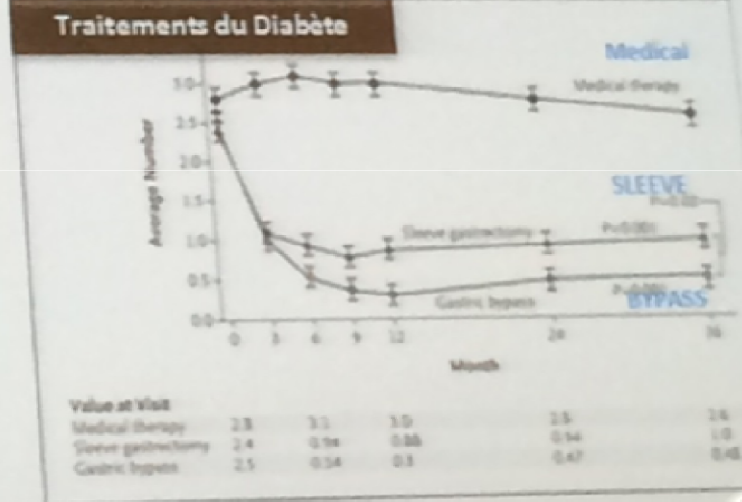
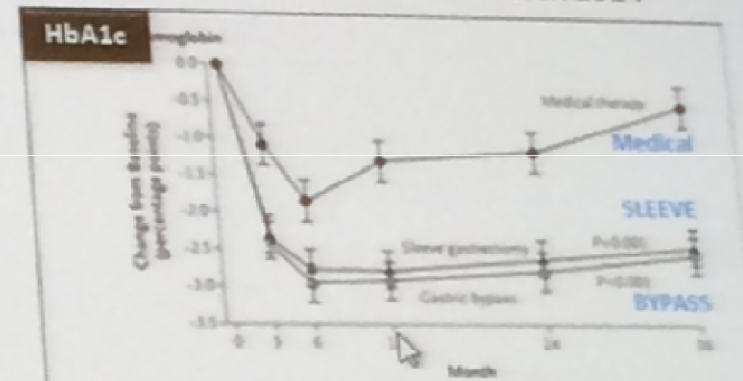
50 ttt med intensif seul

50 ttt med intensif + RYGBP

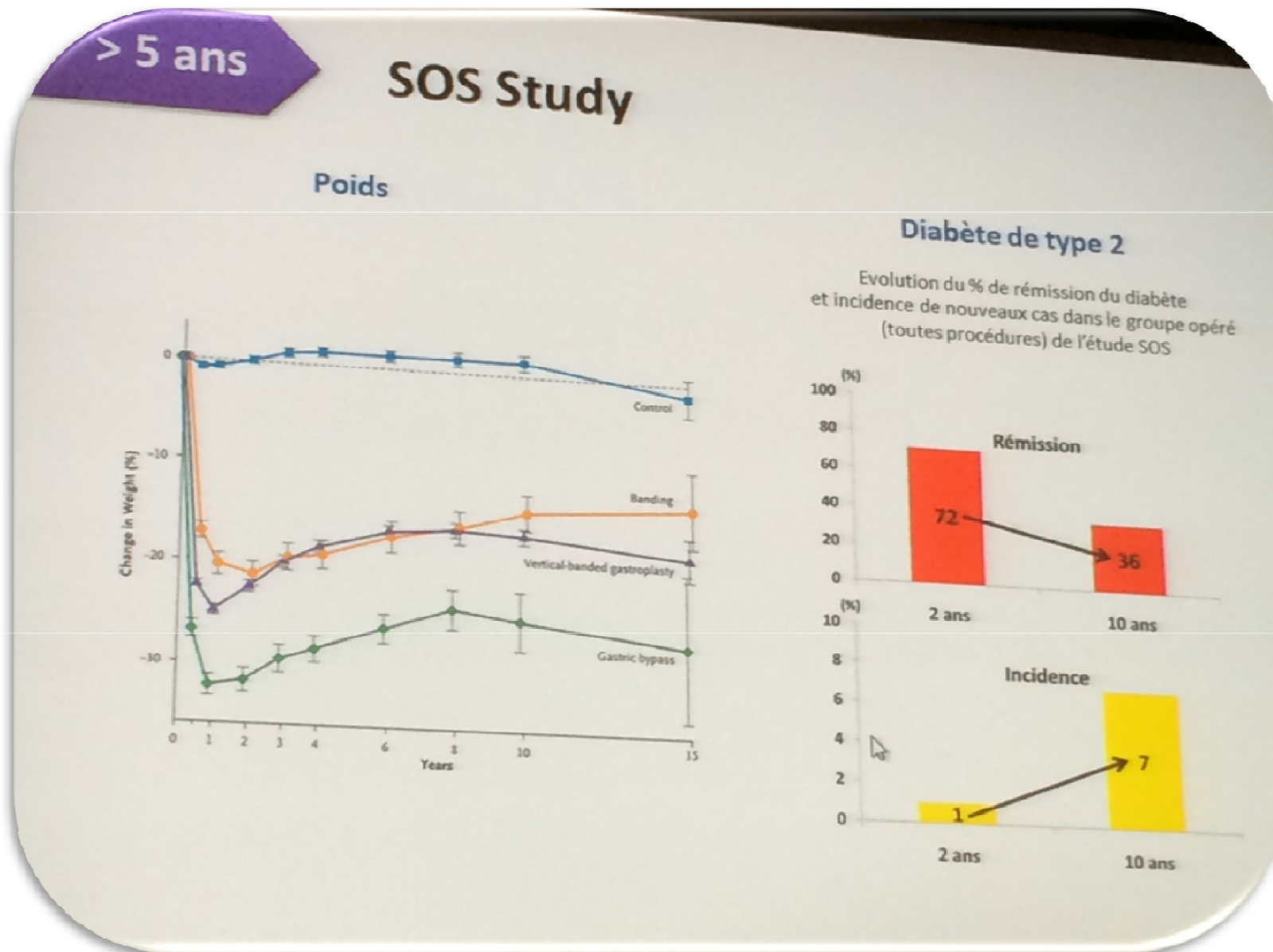
50 ttt med intensif + Sleeve

91% de follow-up

Randomisées



Les recommandations de HAS



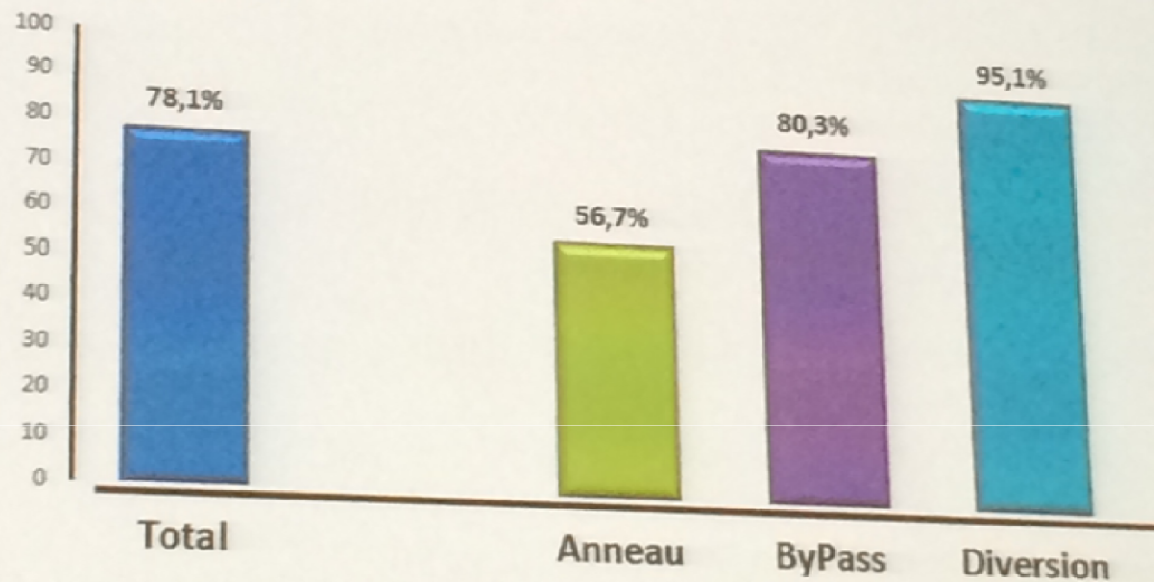
< 2 ans

Bénéfice de la chirurgie métabolique sur le diabète

Weight and Type 2 Diabetes after Bariatric Surgery: Systematic Review and Meta-analysis

Henry Buchwald, MD, PhD,^a Rhonda Estok, RN, BSN,^b Kyle Fahrbach, PhD,^b Deirdre Banel, BA,^b
Michael D. Jensen, MD,^c Walter J. Pories, MD,^d John P. Bantle, MD,^e Isabella Sledge, MD, MPH^b

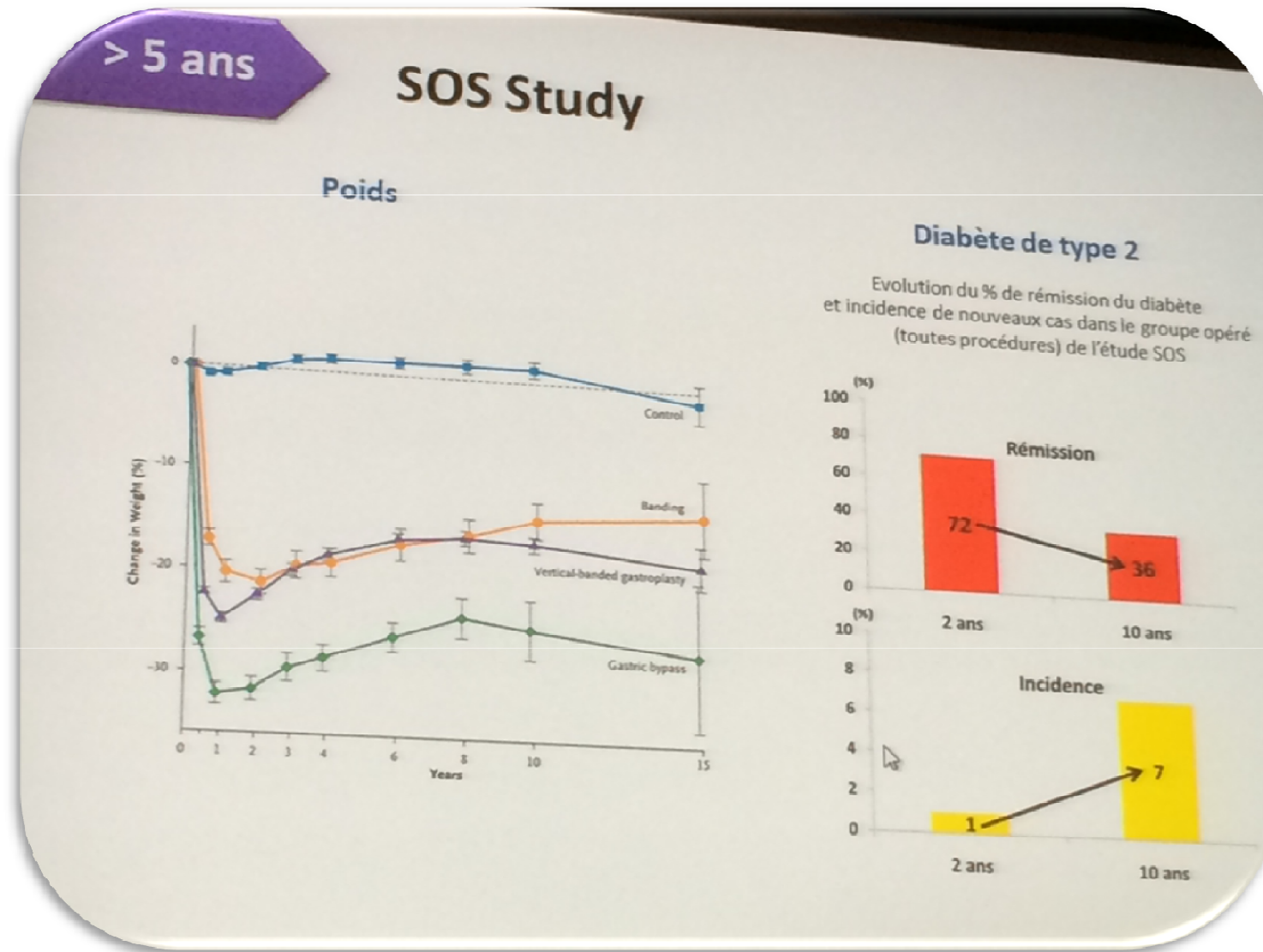
Rémission DT2



Am J Med 2009

Observationnelles

Etat des lieux de la chirurgie en France

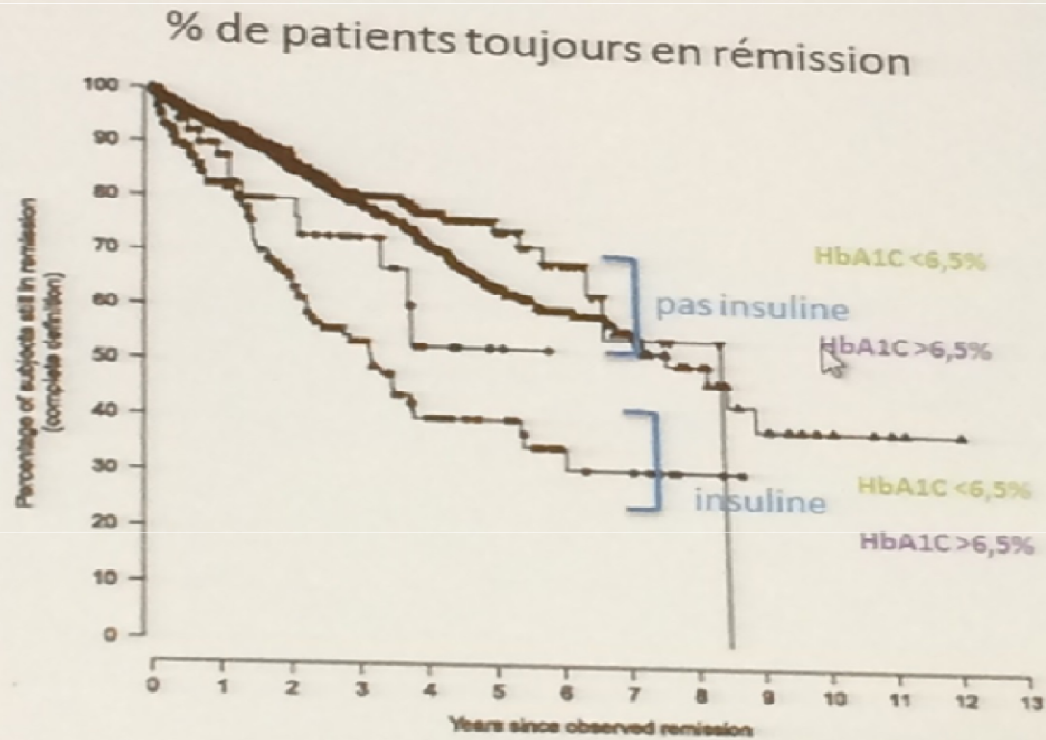


> 5 ans

A multisite study of long-term remission and relapse of Type 2 Diabetes mellitus following gastric bypass

Arterburn et al. Obesity Surgery 2013 23; 93-102

2254 DT2 en rémission



→ **Durée médiane de la rémission** du DT2 post GBP : 8,3 ans

< 2 ans

Guérison / Rémission / Amélioration du diabète

Rémission complète :

- HbA1c < 6%
- Glycémie à jeun < 1 g/L
- Arrêt des ADO ≥ 1 an

Rémission partielle :

- HbA1c 6 à 6,4%
- +/- Glycémie à jeun 1 - 1,25 g/L
- Arrêt des ADO ≥ 1 an

Amélioration :

- Baisse HbA1c > 1 %
- Baisse Glycémie à jeun > 0,25 g/L
- Baisse ADO (nombre ou ½ dose) ≥ 1 an

Inchangé :

- Pas de rémission
- Pas d'amélioration

Récurrence :

- Réapparition HbA1c ≥ 6,5%
- +/- Réapparition Glycémie ≥ 1,26g/L
- ou réintroduction insuline ou ADO

Guérison ? :

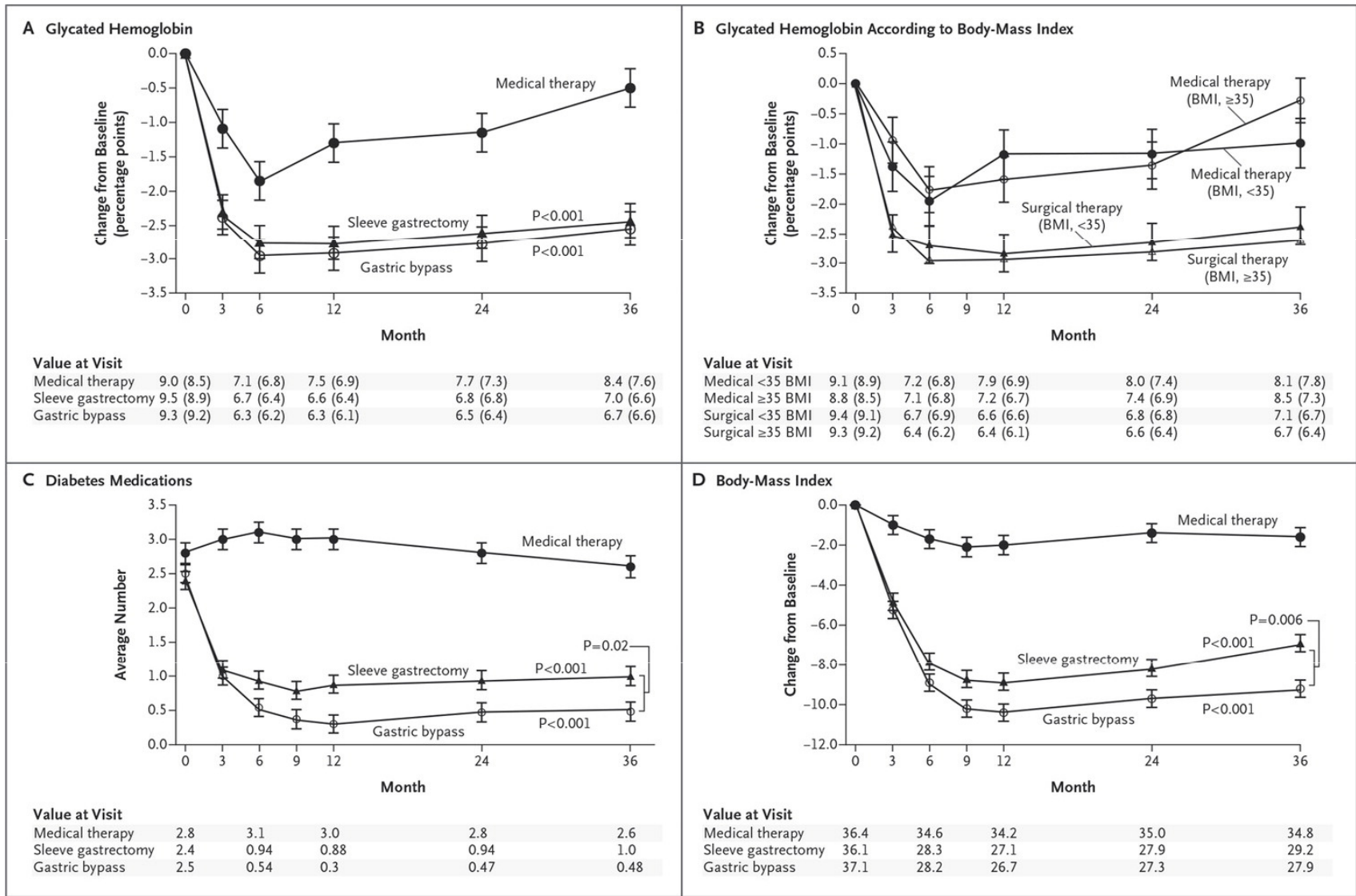
- Rémission complète ≥ 5 ans

ADA- American Diabetes Association

IDF – International Diabetes Federation

• Buse et al – How do we define cure of diabetes ? Diabetes Care 2009

• Schauer – Ann Surg 2003



Schauer PR et al. N Engl J Med 2014;370:2002-2013.

