FACULTÉ DE MÉDECINE PARIS DESCARTES

PARIS DESCARTES

Obésité de l'enfant

Dr Myriam DABBAS

ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS
NECKER-ENFANTS MALADES

The Fat Boy, *The Pickwick Papers*, by Charles Dickens

UNIVERSITÉ PARIS DESCARTES

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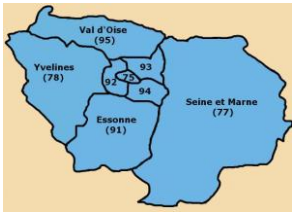
11 M : inhabitants

2.5 M :0-16 years

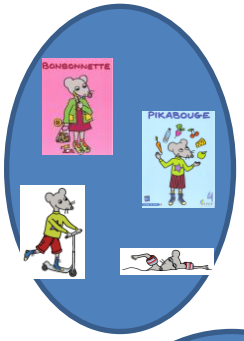


10 000 GP'S
850 pediatricians

38 hospital pediatric units

400 000 :overweight and obese children

100 000 : obese



Ultrasound measurement of total body fat in obese adolescents
J-C Pineau, L Lalys, M Bocquet, A-M Guihard-Costa, M Polak, M-L Frelut, G Peres, M Dabbas-Tyan
Ann Nutr Metab 2010;56:36–44

Evaluation of lean body mass in obese children
A Campanozzi, M Dabbas, J C Ruiz, C Ricour, O Goulet
Eur J Pediatr 2008;167(5):533-40

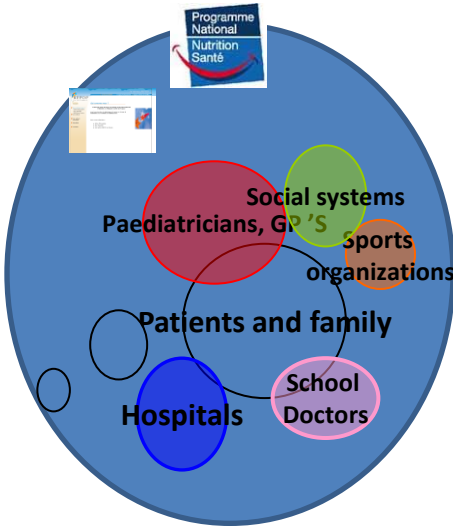
Central Obesity is the major risk factor for failure of obesity management during consolidation phase in children
A El Taguri, M Dabbas-Tyan, C Ricour
Pediatrics 2008;121

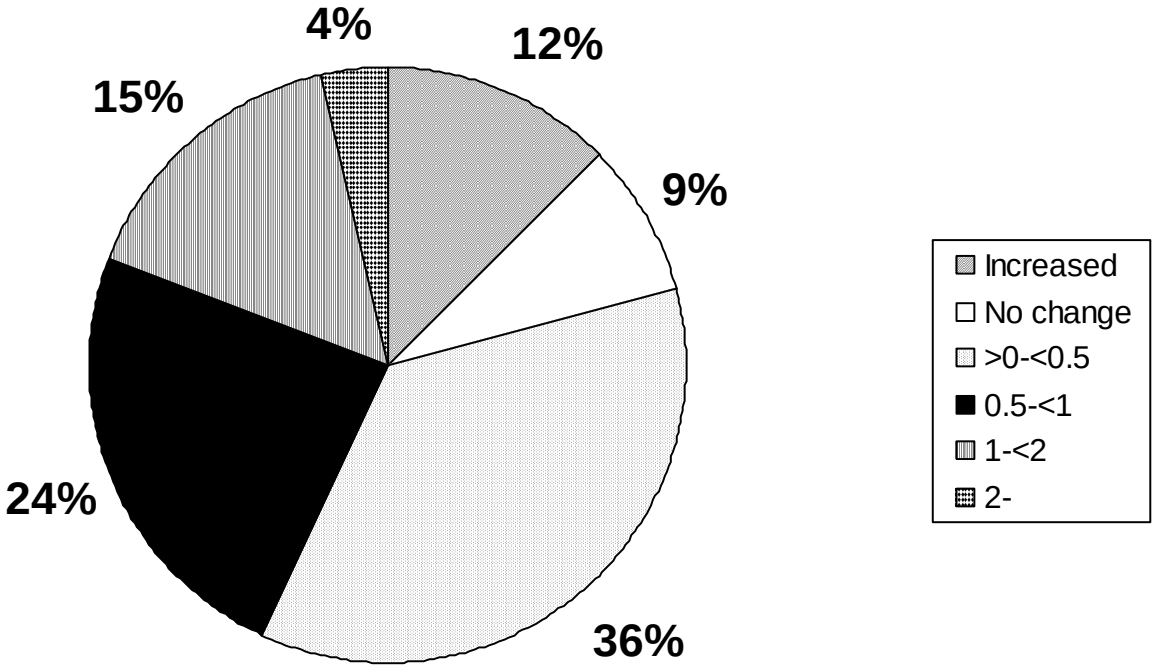
Mental Disorders in Obese Children and Adolescents
G Vila, E Zipper, M Dabbas, C Bertrand, J J Robert, C Ricour, M C Mouren-Simeoni
Psychosomatic Medicine 66:387–394 (2004)

High prevalence of hirsutism and menstrual disorders in obese adolescent girls and adolescent girls with type 1 diabetes mellitus despite different hormonal profiles
D Samara-Boustani, A Colmenares, C Elie, M Dabbas, J Beltrand
European Journal of Endocrinology (2012) 166 307–316

Insulin resistance and the metabolic syndrome in obese French children
C Druet, M Dabbas, V Baltakse, C Payen, B Jouret,
Clinical Endocrinology (2006) 64, 672–678

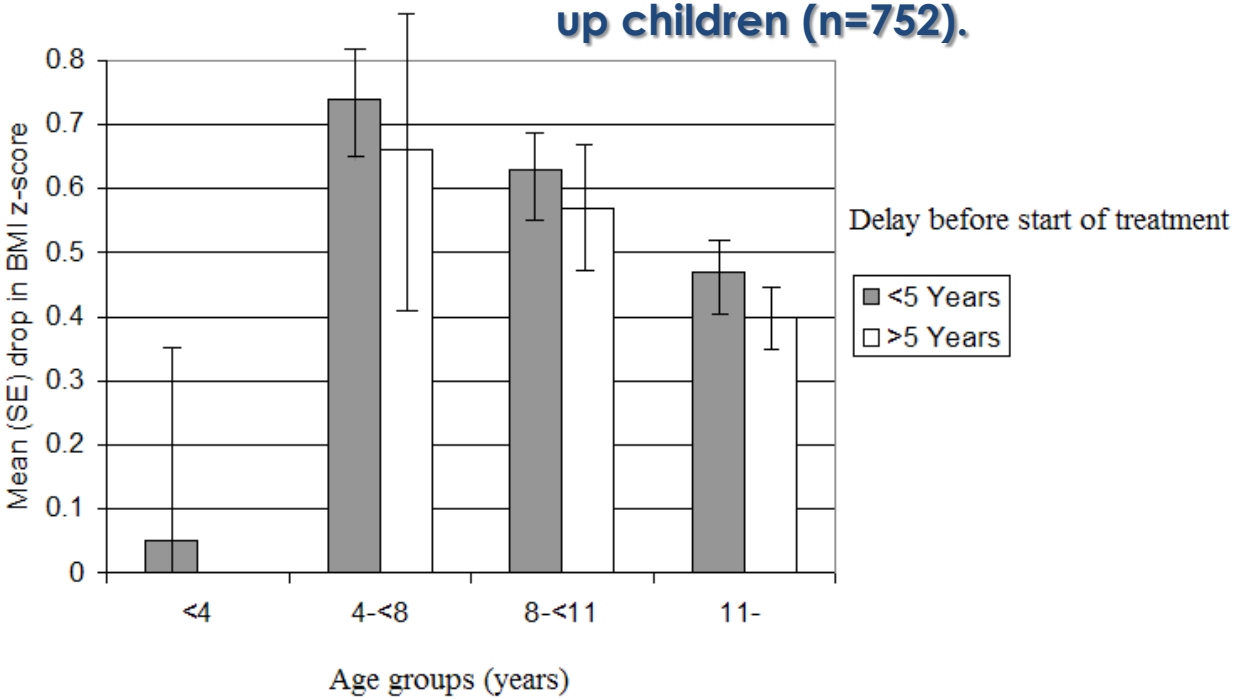
Arterial rigidity and endothelial dysfunction in obese children.
Aggoun Y, Tounian P, Dabbas-Tyan M, Massih TA, Girardet JP, Ricour C, Sidi, D, Bonnet
Arch Mal Coeur Vaiss. 2002; 95(7-8): 631-5.



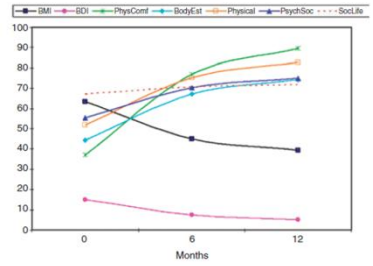


Proportional distribution of cases according to categories of loss in BMI z-score in followed up children (n=752).

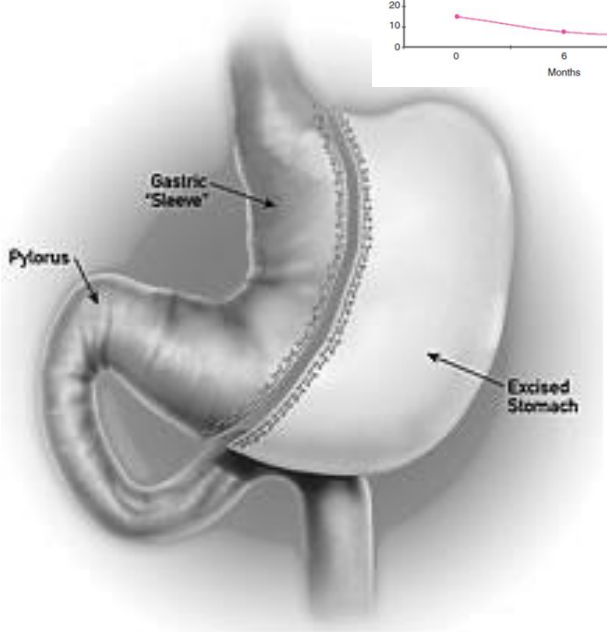
The proportion of success was 79.12%, in 42.95% this drop in BMI z-score was ≥ 0.5.



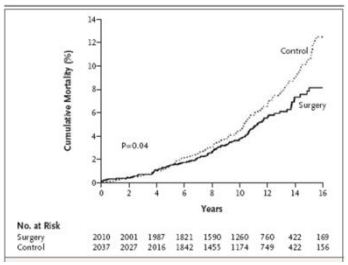
La chirurgie bariatrique

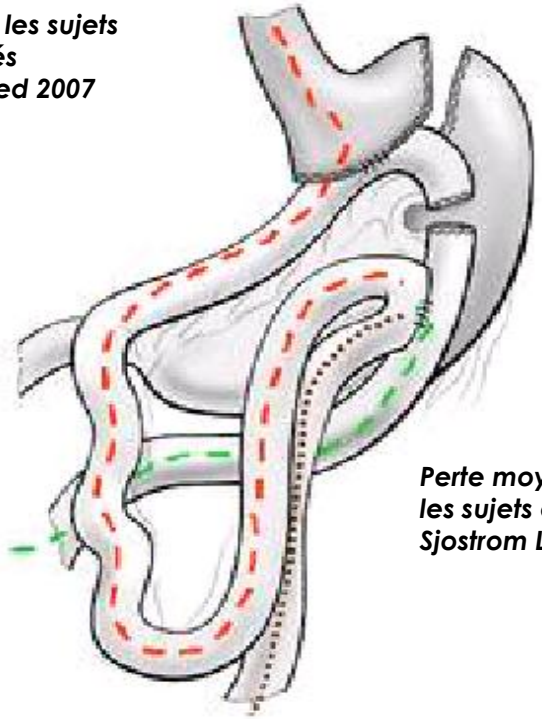


Zeller et al. Obesity 2009

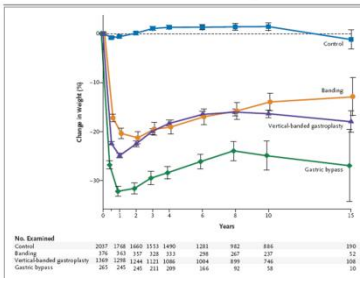


Mortalité cumulative chez les sujets obèses contrôles ou opérés
Sjostrom L et al. N Engl JMed 2007



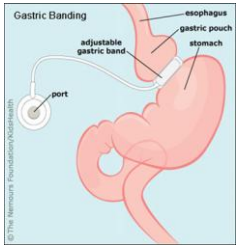


Perte moyenne de poids (IC95%) chez les sujets adultes de la SOS study
Sjostrom L et al. 2007



Recommendations

- Inge et al. Bariatric surgery for severly overweight adolescents concerns and recommendations. *Pediatrics* **2004**
- Fried et al. Inter-disciplinary european guidelines on surgery of severe obesity. *Int J Obes* **2007**
- Pratt et al. Best practice updates for pediatric/adolescent weight loss surgery. *Obesity* **2009**



Bariatric surgery: Mechanisms, indications and outcomes
Paul E O'Brien et al.
Journal of Gastroenterology and Hepatology **25** (2010) 1358–1365

Weight loss approaches and their relative risks, side effects, invasiveness and costs

	Risk score	
1.	1	Lifestyle changes—eat less, more activity and exercise, modify behaviour.
2.	2	Drugs and very low energy diets
3.	4	Endoscopic approaches—intragastric balloon
4.	5	Gastric Banding
5.	7	Sleeve gastrectomy
6.	8	Roux en Y gastric bypass (RYGB)
7.	9	Open biliopancreatic diversion (BPD)
8.	10	Laparoscopic biliopancreatic diversion

Laparoscopic Adjustable Gastric Banding in Severely Obese Adolescents: A Randomized Trial

JAMA. 2010;303(6):519-526
PE. O'Brien et al.

* Methods

Eligibility criteria

- **Age over 14 years (tanner stage IV or V).**
- **Body Mass Index ≥ 40.**
- **Failure of 12 months of multidisciplinary lifestyle intervention at least.**
- **Exclusion criteria: syndromic obesity and psychiatric disorders.**
- **Fully informed consent.**

Screening : medical, psychological and social history.

Prospective longitudinal data collection.

2 RCP: au début du suivi (n-12 mois) et avant la décision définitive chirurgicale (n-3 mois) « ½ »

- Laparoscopie ***Chirurgien pédiatre*** « in situ »
- Techniques « pars flacida » avec valve en avant de l'anneau

- **Temps opératoire :**
- Total = 2h14 (1h47 – 3h51)
- Installation = 20 – 30 minutes, Chirurgie = 1h16 (55 min – 1h48)
- **Hospitalisation:** 48 h

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Patients / year

N=670

N=540

Assessed for eligibility

N=130
20%

N=60

Excluded

N=70

N=47
7%

AGB

N=10

Education

N=23

Waiting list

* Patients

Since 2008

47 adolescents have undergone LAGB (23% male).

Mean age = 16.7 ± 0.9 years (range: 14.5 - 18 years).

Mean BMI = 44.8 ± 5.2 kg/m² (range: 36 - 57).

EW: 56.8 ± 16.3 Kg.

75%	Metabolic syndrome
90%	Insulin-resistance
55%	Dyslipidemia
90%	Steatosis
47%	Menstrual disorders

Mean follow - up: 33 months (range: 3 - 84 months)

(87% > 2 years, 68 > 3 years, 36% > 5 years)

30 transition plan

Health outcomes: Three years after Laparoscopic Adjustable Gastric Banding « LAGB » in adolescents.

The French experience

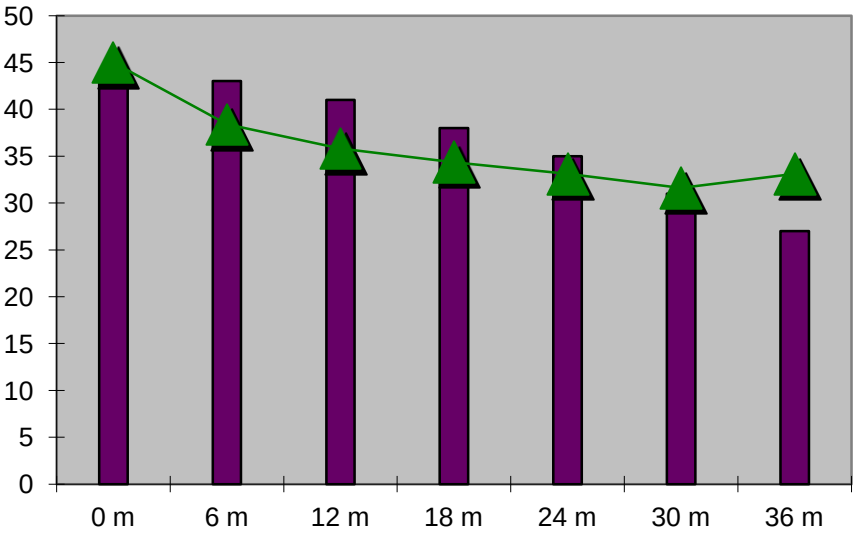
***M. Dabbas*, N. Khen-Dunlop, C. Telion,**
Y. Aigrain, O. Goulet, Y. Révillon.

Hôpital Necker – Enfants Malades, Paris

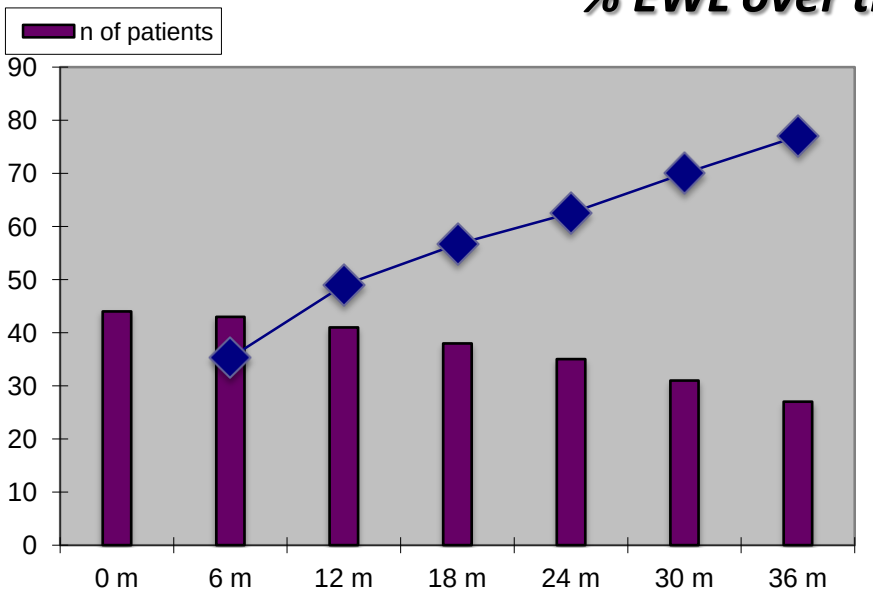
Results

	Before	1 year	2 years	3 years
N	47	44	41	32
Weight Kg	128.2 ± 20.4	106.6 ± 20.7 *	98.7 ± 21.1*Ⓡ	96.9 ± 21.6 *
Weight loss Kg		26.6 ± 12.9	34.5 ± 13.5Ⓡ	38.8 ± 16.7 Ⓡ
Excess weight loss %		45.6 ± 22.2	61.0 ± 23.4Ⓡ	65.6 ± 28.5 Ⓡ
BMI Kg/m²	45.0 ± 5.32	36.7 ± 6.2 *	33.5 ± 6.5 *Ⓡ	32.8 ± 7.6 * Ⓡ
BMI Loss		9.6 ± 4.6	12.6 ± 4.9Ⓡ	13.8 ± 5.9 Ⓡ

BMI over time



% EWL over time

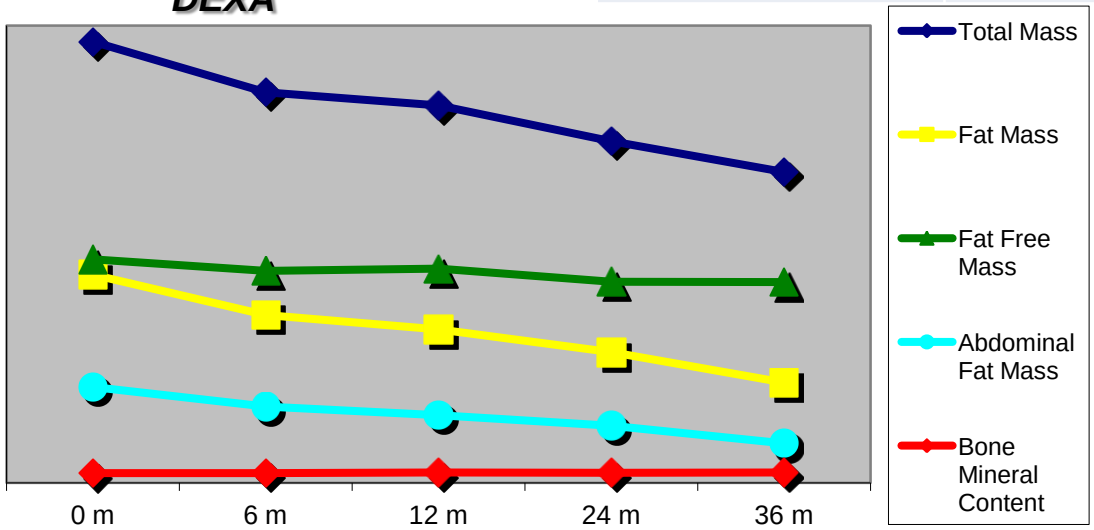


Results

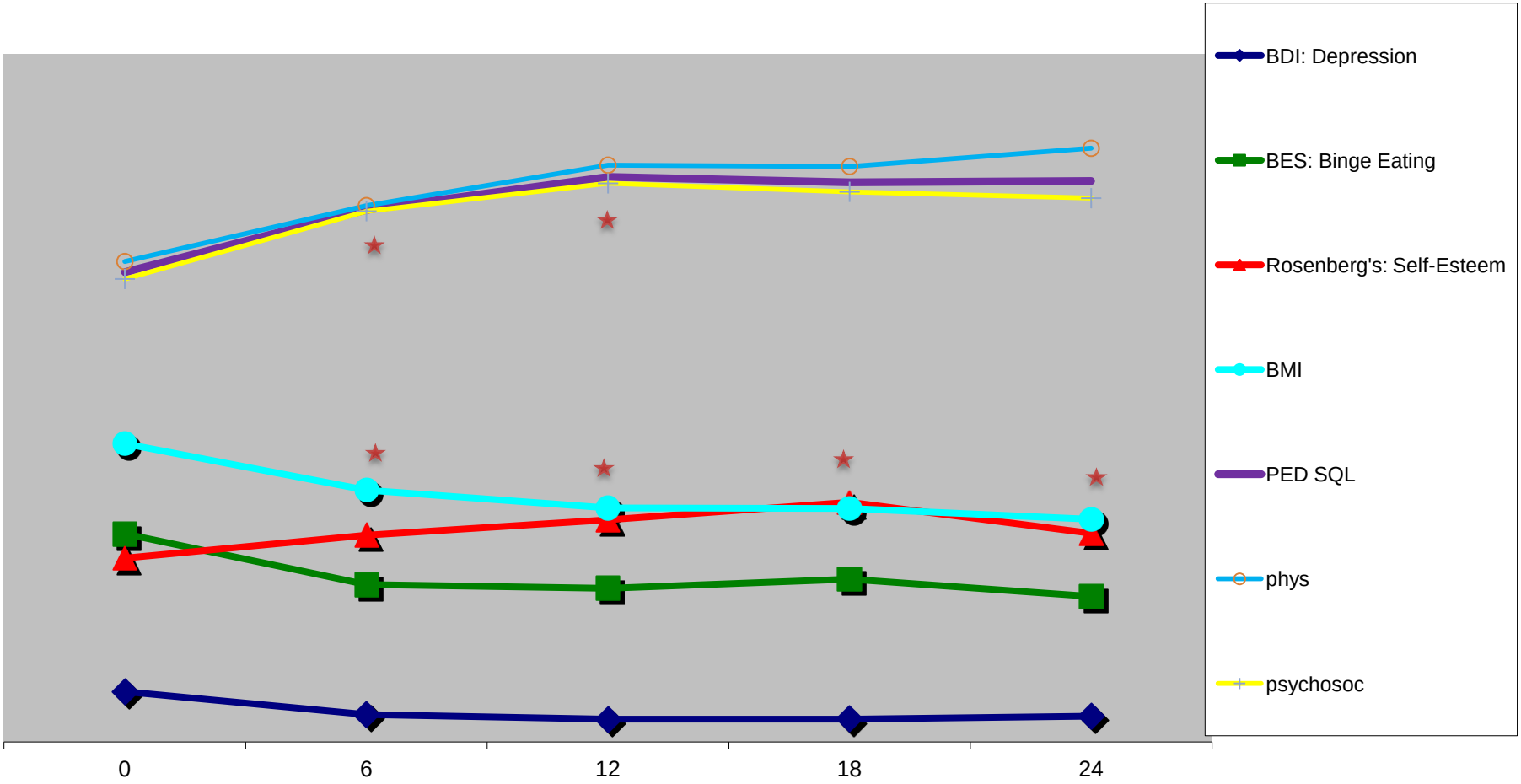
Changes in cardiovascular risk

	Before	1 year	2 years	3 years
N	47	44	41	32
Abdominal Fat Mass (Kg)	26.6 ± 4.8	19.4 ± 7.4 *	16.1 ± 7.7 *	10.9 ± 5.3 *
Homa- IR	5.6 ± 3.4	2.6 ± 1.4 *	2.0 ± 0.9 *	1.1 ± 0.6 *
Triglycerides: HDL Ch Ratio	2.4 ± 1.4	1.7 ± 1.1 *	1.4 ± 0.9 *	1.1 ± 0.2 *
Systolic BP (mm Hg)	117.4 ±10.2	115.3 ± 11	117.6 ± 11.4	118 ± 15.2
Diastolic BP (mm Hg)	64.8 ± 5.7	64.3 ± 7.6	64.2 ± 5.6	64 ± 5.2

Changes of Body Composition DEXA



Psychological Outcomes



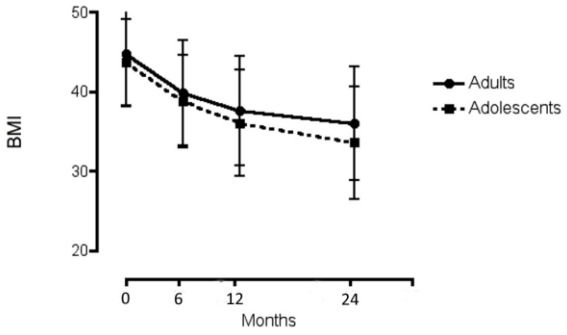
COMPARATIVE RESULTS OF GASTRIC BANDING IN ADOLESCENTS AND YOUNG ADULTS

Hervieux E, Baud G, Dabbas M, Pigeyre M, Caiazzo R, Verhaeghe R, Goulet O, Aigrain Y, Révillon Y, Pattou F, Khen-Dunlop N.

***J Pediatr Surg* 2016**

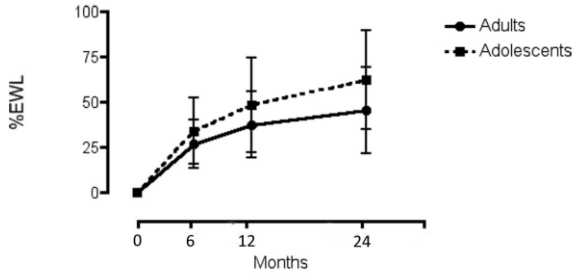
Comparison of post-operative BMI Evolution

BMI evolution is comparable between both groups from T0 (before surgery) to 24 month post-operatively. In adolescents: 43.9 ± 5.5 kg/m^2, 38.7 ±5.8 kg/m^2, 36.0 ±6.7 kg/m^2 and 33.5 ±7.1 kg/m^2. In adults: 44.6 ± 5.7 kg/m^2, 39.8 ±6.7 kg/m^2, 37.6 ±6.9 kg/m^2 and 36.1 ±7.1 kg/m^2. Values are mean and SD.

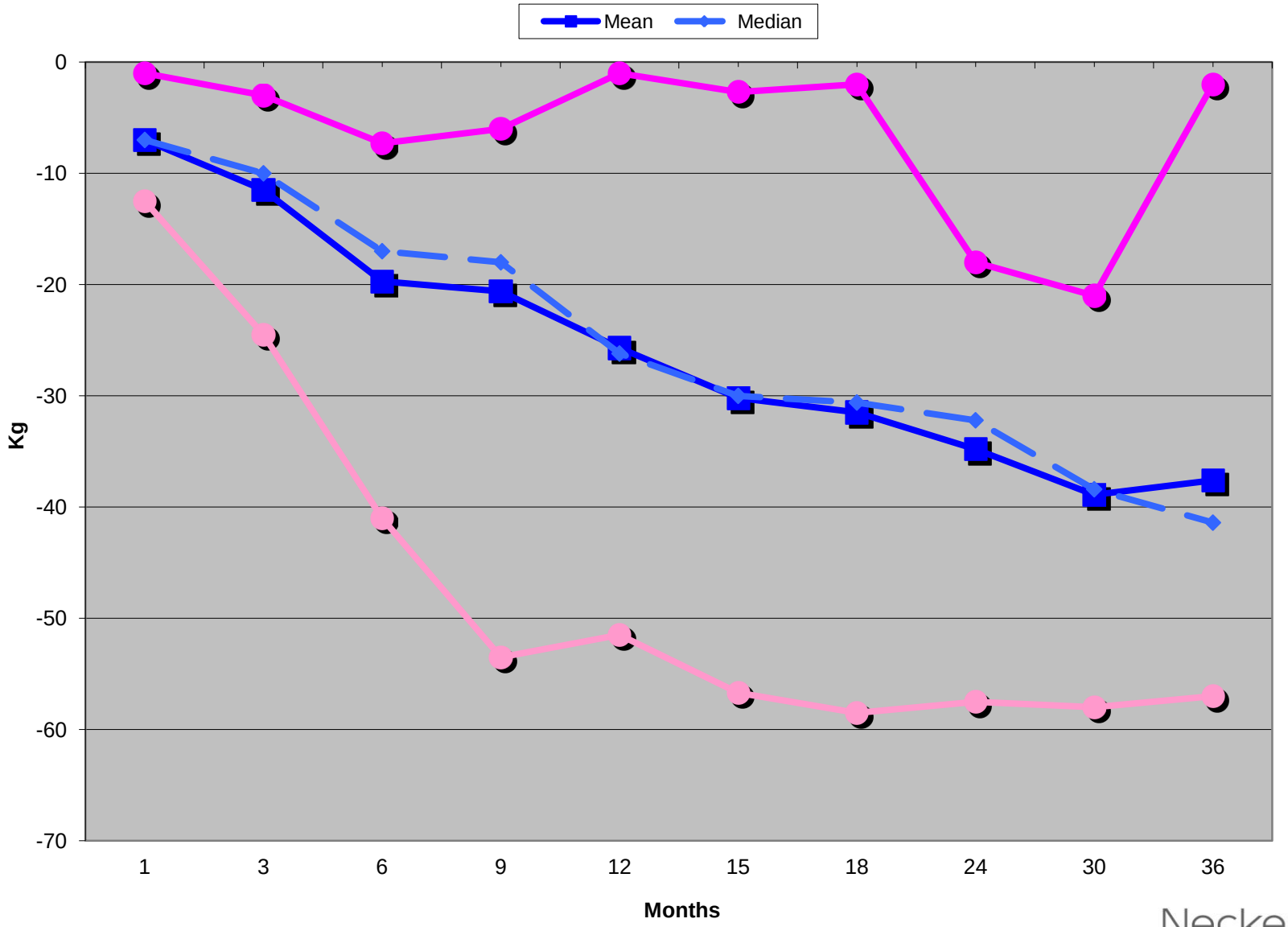


Comparison of post-operative EWL Evolution

EWL evolution is comparable in the first six months after surgery but significant differences appears at 12 and 24 months (p=0.03 and p=0.02 respectively).. In adolescents: 34.1 ±18.3%, 48.6 ±26.2% and 62.3 ±27.4%. In adults: 26.9 ±13.3%, 37.6 ±18.4% and 45.5 ±23.5%. Values are mean and SD.



Weight Loss over time



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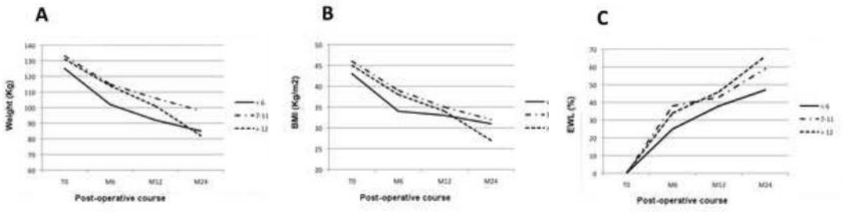
Primordial influence of post-operative compliance in weight loss after adolescent laparoscopic adjustable gastric banding.

N Khen-Dunlop, MD-PhD, M Dabbas, MD, G de Filippo, MD-PhD , J-P Jais, MD-PhD, E Hervieux, MD , C Télion, MD, J-M Chevallier, MD-PhD, J-L Michel, MD, Y Aigrain, MD-PhD, P Bougnieres, MD-PhD, O Goulet, MD-PhD, Y Revillon, MD-PhD.

Obes Surg 2015



A. Weight evolution was comparable between the three groups. At M24, no difference was found in final weights.

B. BMI evolution was comparable between the three groups during the first 6 months. After the first year, the BMI decrease of the ≤6 consultations/year group was slower than the BMI decrease in the ≥12 consultations/year group, leading to significant differences in final BMI: 31kg/m2 vs 27 kg/m2 respectively (p=0.008).

C. EWL evolution was also comparable between the three groups during the first 6 months. After the first year, the EWL increase of the ≤6 consultations/year group was slower than the EWL increase of the ≥12 consultations/year group, leading to significant differences in final EWL: 47% vs 66% respectively (p=0.005).

Post-operative results considering the number of consultations/year. Mixed effects linear model of multivariate analyses.

Estimated values from multivariate analyses are represented. Three groups were compared ≤6 consultations/year, 7-11 consultations/year and ≥12 consultations/year. Statistical analyses were performed between pre-operative values (T0) and values two years after surgery (M24).

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1 Year Education → **3 Years Follow-up** → **Transition plan**

D Myriam	DDN 20/05/93 22,6	18/11/09	109kg 37,7	↓	28/11/14 Cs commD + NKD Adulte		**Vue le 28/11/14 en cs de transition**. RDV à prévoir mars 2015 Pr CHEVALLIER.	Traitement Néomercazol à démarrer après Cs + écho thyroïdienne à faire en ville - A vu Dr DUCLOUX (endocrino HEGP) 07/01/1 - Prochains RDV programmés en mai et sept 2015 - Doit prendre RDV avec Pr Chevallier.
K Nivine	DDN 17/06/93 22,6	23/06/10	93kg 32,2	↑	28/11/14 Cs commD + NKD Adulte		**Vue cs commune de transition 28/11/14**	RDV Pr CHEVALLIER 23/04/15 à 11h15
M Farah	DDN 25/11/92 23,1	23/06/10	92kg 29,7	→	28/11/14 Cs commD + NKD Adulte		**Vue cs commune de transition 28/11/14**	A reporté son RDV Pr CHEVALLIER doit nous donner la date - TOGD de contrôle à faire auparavant en ville + supplémentation vit D envoyée
D Josué	DDN 22/09/93 22,3	06/04/11	94kg 27,5	→	28/11/14 Cs commD + NKD Adulte		**Vue cs commune de transition 28/11/14**	RDV Pr CHEVALLIER 23/04/15 à 12h30 (Josué demandeur retrait anneau)
H Elyes	DDN 27/07/95 20,5	28/09/11	119kg 38	↓	MDJ 16/10/14	28/11/14 Cs commD + NKD Adulte	Ne s'est pas présenté cs commune de transition 28/11/14 (Annulation par téléphone du RDV). Dossier discuter avec Pr CHEVALLIER pour passage adulte	RDV Pr CHEVALLIER 23/04/15 12h00 (+ RDV MD auparavant si Elyes est demandeur : RAS à ce jour)
THJuthamas	DDN 07/04/95 20,8	15/02/12	139kg 47	↑	28/11/14 Cs commD + NKD Adulte		**Vue cs commune de transition 28/11/14**	RDV Pr CHEVALLIER 23/04/15 à 13h00 - TOGD contrôle à faire auparavant en ville
A Luna	Protocole DDN 16/04/96 19,7	12/02/14	81kg 28,4	↓	04/02/15 MD		**Vue cs commune de transition 28/11/14**	RDV Pr CHEVALLIER 23/04/15 à 12h45 - Serrage en ville fait (total 6cc) - Depuis serrage -10kg - Desserrage à 3cc le 11/02 (agglomérat agb) - Vue en urgence 04/02/15 - Douleurs chevilles - Bilan de contrôle en ville le 16/02/15 - Transmis MD

N=47

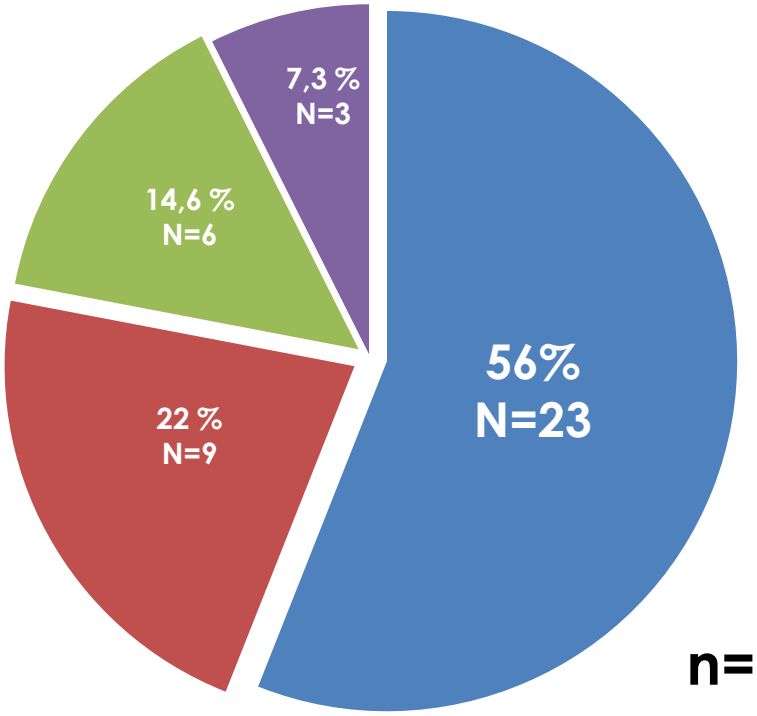
Mean follow - up: 33 months (range: 3 - 96 months)

87% > 2 years

68 % > 3 years

36% > 5 years

30 transition plan



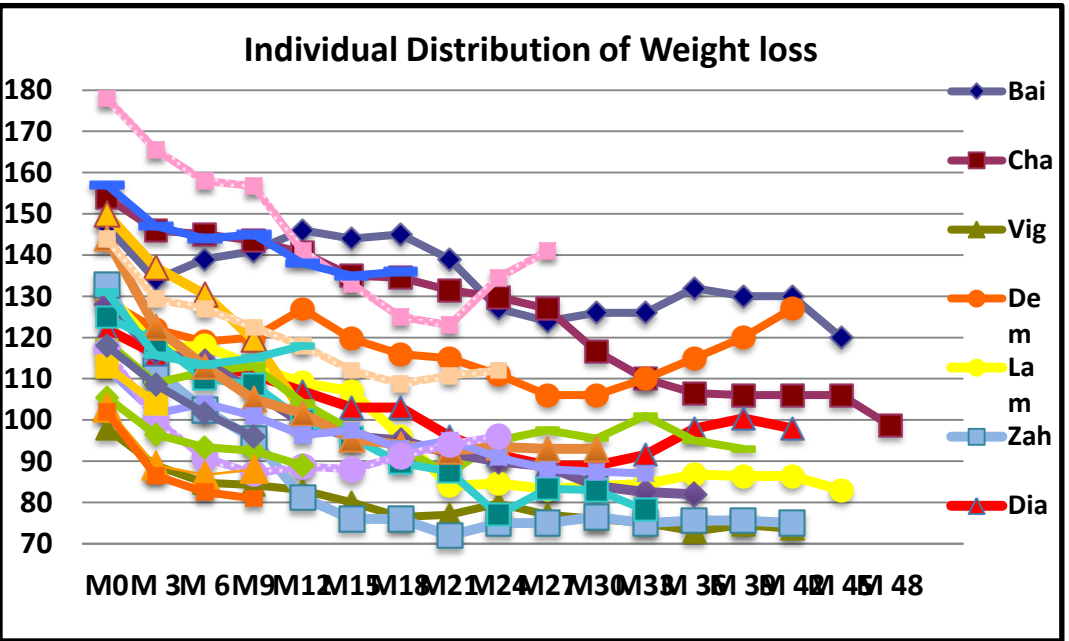
n= 41>2 ans

* Conclusions

High level of success rate

Professional support

Manuella	DDN 21/08/90	Dossier 04/4/09	Chir. 09/07/08	MD + GL + FP 21/07/08	Revillon 14/08/08	FP + GL 25/08/08	Revillon 11/09/08	MD 09/10/08	Thibaud 16/10/08	GL + FP + Thibaud 20/11/08	HDJ + FP + GL 28/01/09	MD 23/02/09	GL 26/03/09	GL + MD 23/04/09	MD 15/06/09	1er serrage anneau 24/06/09 (3,5 cc)	GL 09/07/09
Poids Max = 154kg				HDJ + GL + FP 26/09/09	MD 21/10/09	GL 25/11/09	MD 20/01/10	Thibaud 09/02/10	GL 25/02/10	MD 21/04/10	GL 05/05/10	EB 09/06/10	HDJ + MD + EB + VZ + GYNECO 08/07/10	EB 28/07/10	EB 01/09/10	MD 15/09/10	EB 22/09/10
Poids Min =				EB 06/10/10	EB 20/10/10	2ème serrage anneau 25/10/10 (4,5 cc)	EB 17/11/10	EB 01/12/10	MD + VZ + EB 15/12/10	EB 05/01/11	EB + GL 19/01/11	EB 02/02/11	MD 16/03/11	EB 30/03/11	EB 25/05/11	EB 29/06/11	MD + GL 06/07/11
Poids ID = 73kg				EB 20/07/11	19/10/11 MD + GL + EB	EB 23/11/11	EB + GL 21/12/11	HDJ 02/01/12	EB + MD 01/02/12	EB + GL 14/03/12	EB 02/05/12	EB + MD 13/06/12	3ème serrage anneau 18/06/12 (5,5 cc)	GL + EB 25/07/12	GL (16h30) 17/10/12	EB (14h) + MD (15h) 12/12/12	EB + GL 20/02/13
Dernier Poids 12/12/12 = 95kg600			1ere consult service 31/03/04	20/03/13 MD + EB à la demande manuella	24/05/13 MD + NKD	11/09/13 GL 14h + EB 14h30											



Variability

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