



VOJVOĐANSKA AKADEMIJA
NAUKA I UMETNOSTI

SAVREMENO LEČENJE GOJAZNOSTI I METABOLIČKOG SINDROMA

Prof. Dr Miroslav Ilić

Pristupno predavanje, 3. jun 2021.

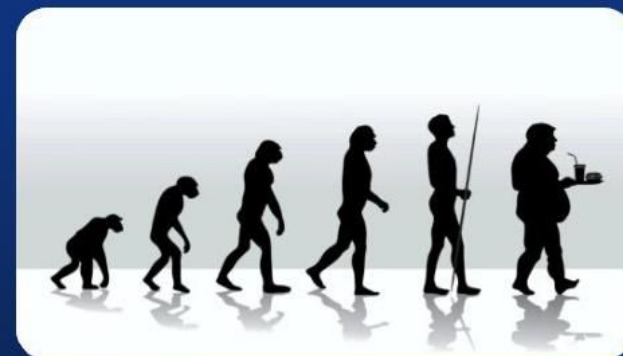


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Medicinski fakultet u Novom Sadu

„GLOBESITY“

Gojaznost (*obesitas*) je hronična bolest koja se ispoljava prekomernim nakupljanjem masti u organizmu i povećanjem telesne težine.



- ✓ Epidemija: 2 milijarde ljudi sa prekomernom težinom i 650 miliona gojaznih
- ✓ Prevalenca SAD 36% odraslih i 17% adolescenata
- ✓ 15% odraslih SAD (BMI > 35 kg/m²)
- ✓ Peti vodeći uzrok smrti u svetu (WHO), milion u EU
- ✓ Odgovorna za 80% slučajeva šećerne bolesti, 35% ishemične bolesti srca i 55% hipertenzija

Fried M, Yumuk V, Oppert JM, Scopinaro N, Torres AJ, Weiner R, Yashkov Y, Fruhbk G. Interdisciplinary European Guidelines on Metabolic and Bariatric Surgery. Obes Facts 2013;6:449–468 .



Zašto smo gojazni?

Multikauzalni uzroci

Genetski

Evolucioni

hipoteza štedljivog genotipa

James Neel, 1962

Okruženje

socijalni

kulturološki

Homeostaza energije

Kontrola unosa hrane

Potrošnja energije

Termogeneza

Biologija adipocita (masti)



Vilendorfska Venera 25.000 godina pre Hrista



Klasifikacija gojaznosti

BMI (indeks telesne mase) = kg/m^2

	BMI
Underweight	$<18.5 \text{ kg/m}^2$
Normal or acceptable weight	$18.5\text{-}24.9 \text{ kg/m}^2$
Overweight	$25\text{-}29.9 \text{ kg/m}^2$
Obese	$\geq 30 \text{ kg/m}^2$
Grade 1	$30\text{-}34.9 \text{ kg/m}^2$
Grade 2	$35.0\text{-}39.9 \text{ kg/m}^2$
Grade 3	$\geq 40 \text{ kg/m}^2$ (severe, extreme or morbid obesity)
Grade 4	$\geq 50 \text{ kg/m}^2$
Grade 5	$\geq 60 \text{ kg/m}^2$
Abdominal obesity in Caucasians	Waist girth
Men	$\geq 94 \text{ cm}$
Women	$\geq 80 \text{ cm}$



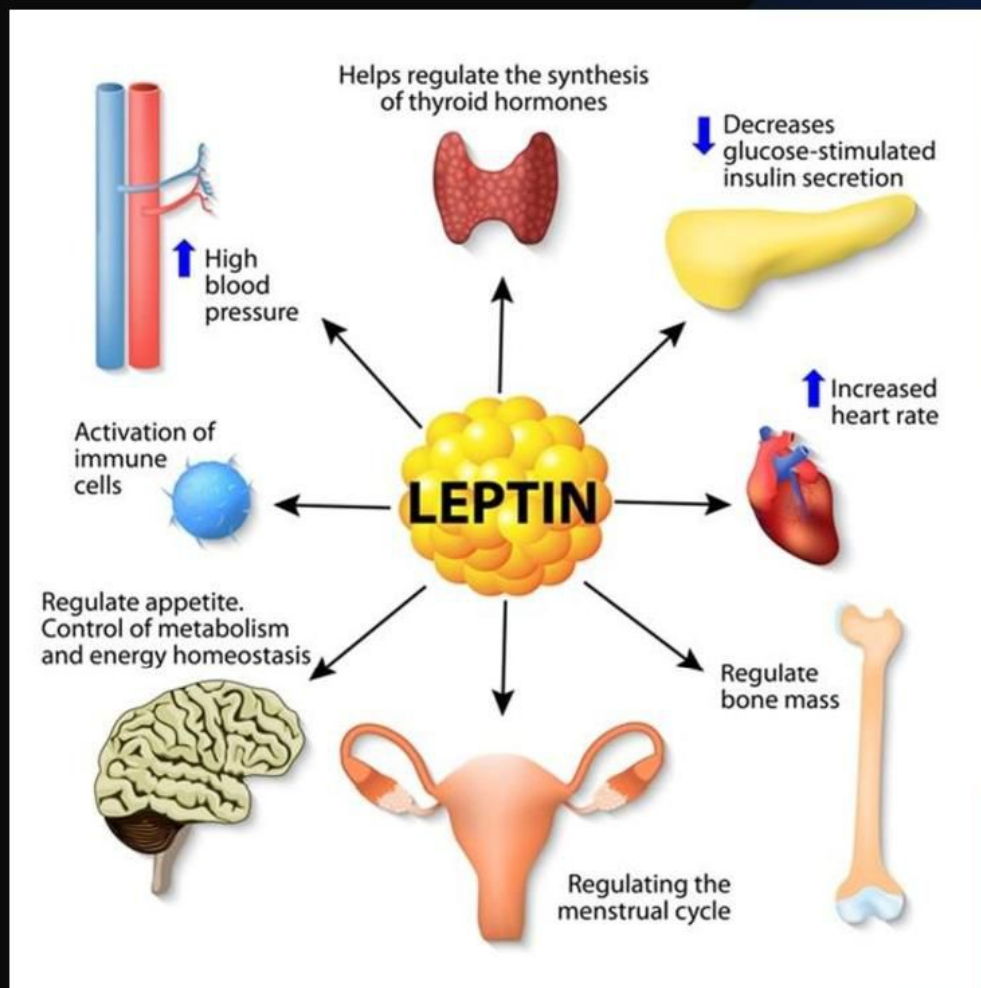
SCIENCE PHC

SCIENCE PHC



Leptinska paradigma – kontrola unosa hrane

Jeffrey Fridman 1994. otkrio i klonirao gen za leptin (g. leptos – tanak)



Hormon koji proizvode adipociti. Kodiran je genom **GEN OB** na 7 hromozomu.

Ključna uloga u regulatornim mehanizmima apetita i skladištenju energije. Reguliše nivo telesne masti kroz centralnu (hipotalamus) inhibiciju apetita i unosa hrane.

Visok nivo leptina u krvi – visok procenat masti u telu i BMI.

Leptin je citokin koji sadrži interleukin 6 i HR. Deluje preko leptinskih receptora.

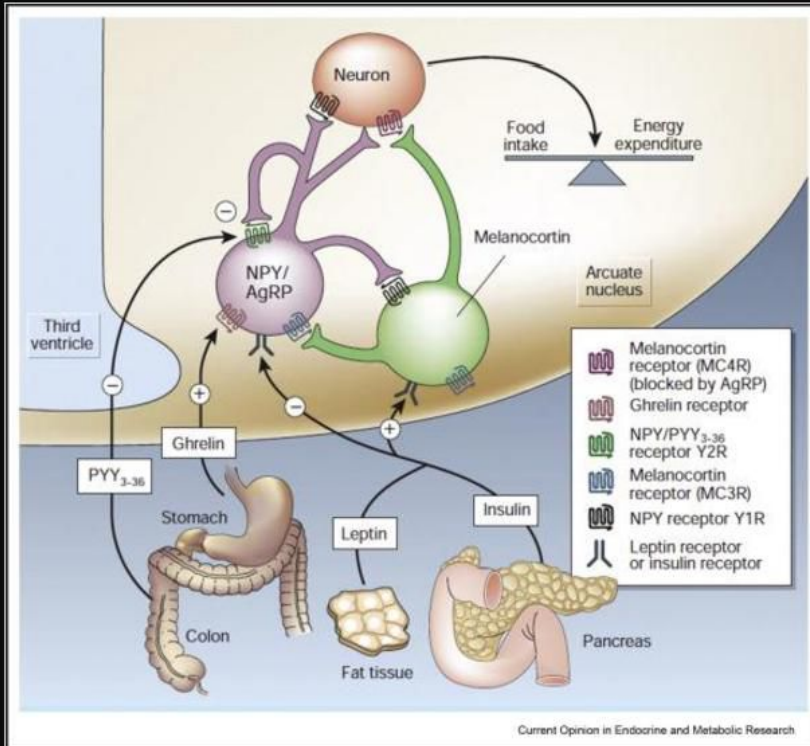
Homozigotne genske mutacije dovode do gojaznosti u miševa.

Brak kod bliskih osoba dovodi do mutacije gena za leptin.

Lečenje „leptinopenije“: metreleptin (sc); genski „sekvensing“



Homeostazna modulacija i hormoni creva u gojznosti



Current Opinion in Endocrine and Metabolic Research

Schwartz, M.W. and G.J. Morton, Obesity: keeping hunger at bay. *Nature*, 2002.418 (6898): p. 595.

Changes in circulating gut hormones following RYGB, SG and diet induced weight loss.

Gut hormone	Changes in RYGB	Changes in SG	Changes in Dieting
<i>Anorexigenic</i>			
GLP-1	Fasting levels: ↔ Post prandial levels: ↑↑↑ [30,51,52,55]	Fasting levels: ↔ Post prandial levels: ↑↑ [51,52]	↔ or ↓ [40]
PYY	Fasting levels: ↔ or ↑ Post prandial levels: ↑↑↑ [30,51,55,79]	Fasting levels: ↔ or ↑ Post prandial levels: ↑↑ [51,52]	↔ or ↓ [37,40]
Oxyntomodulin	↑ [69]		
CCK	↑ [30,55]	↑↑ [52]	↓ [37,40]
GIP	↔ or ↓ [72]	↔ or ↓ [80]	↑ [37]
Neurotensin	↑↑ [81]		
Gastrin	↔ or ↓ [82]	↔ or ↓ [82]	
Amylin	↓ [79]		↓ [40]
FGF19	↑ [83,84]	↑ [83]	↔ [84]
Bile acids	Conflicting data: ↔ or ↑↑ [83,85]	Conflicting data: ↔ or ↑ [83,85]	↓ [86]
<i>Orexigenic</i>			
Ghrelin	↓ in the first weeks longer-term effects are controversial: ↔, ↓ or ↑ [30]	Fasting levels: ↓ Postprandial levels: ↓↓ [51,80]	↔ or ↑, VLCD or ketogenic diet: ↓ [37,41]

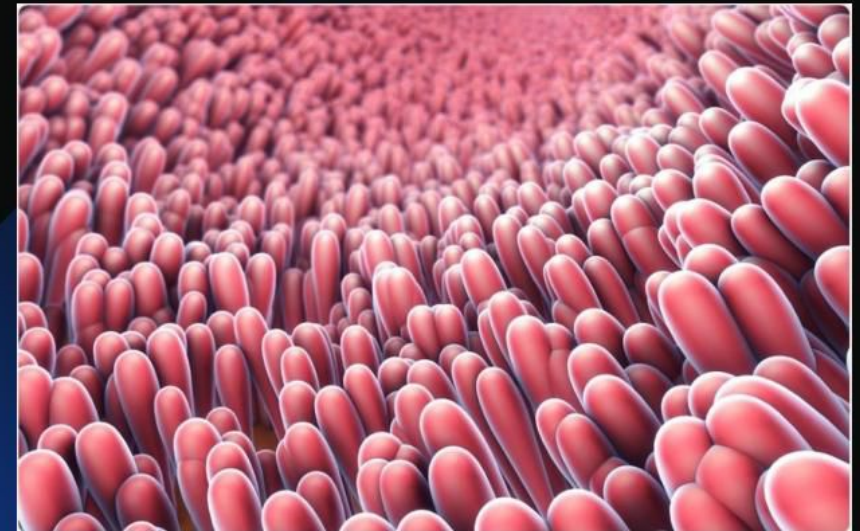
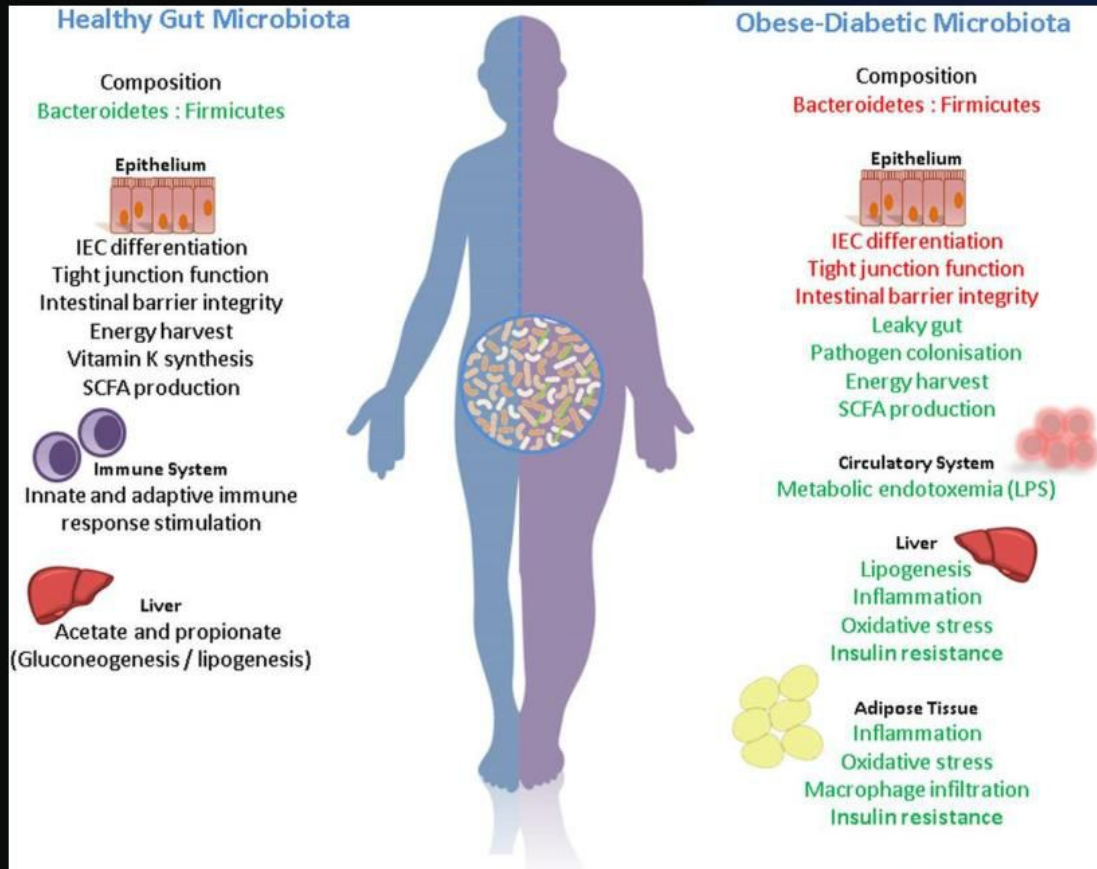
↑ = increase intervention.
↓ = decrease intervention.
↔ = no significant change.

Jessica KW. Mok, Janine M. Makaronidis, Rachel L. Batterham. The role of gut hormones in obesity. *Current Opinion in Endocrine and Metabolic Research*, 2019:4 p.4-13

Savremeno lečenje gojznosti i metaboličkog sindroma

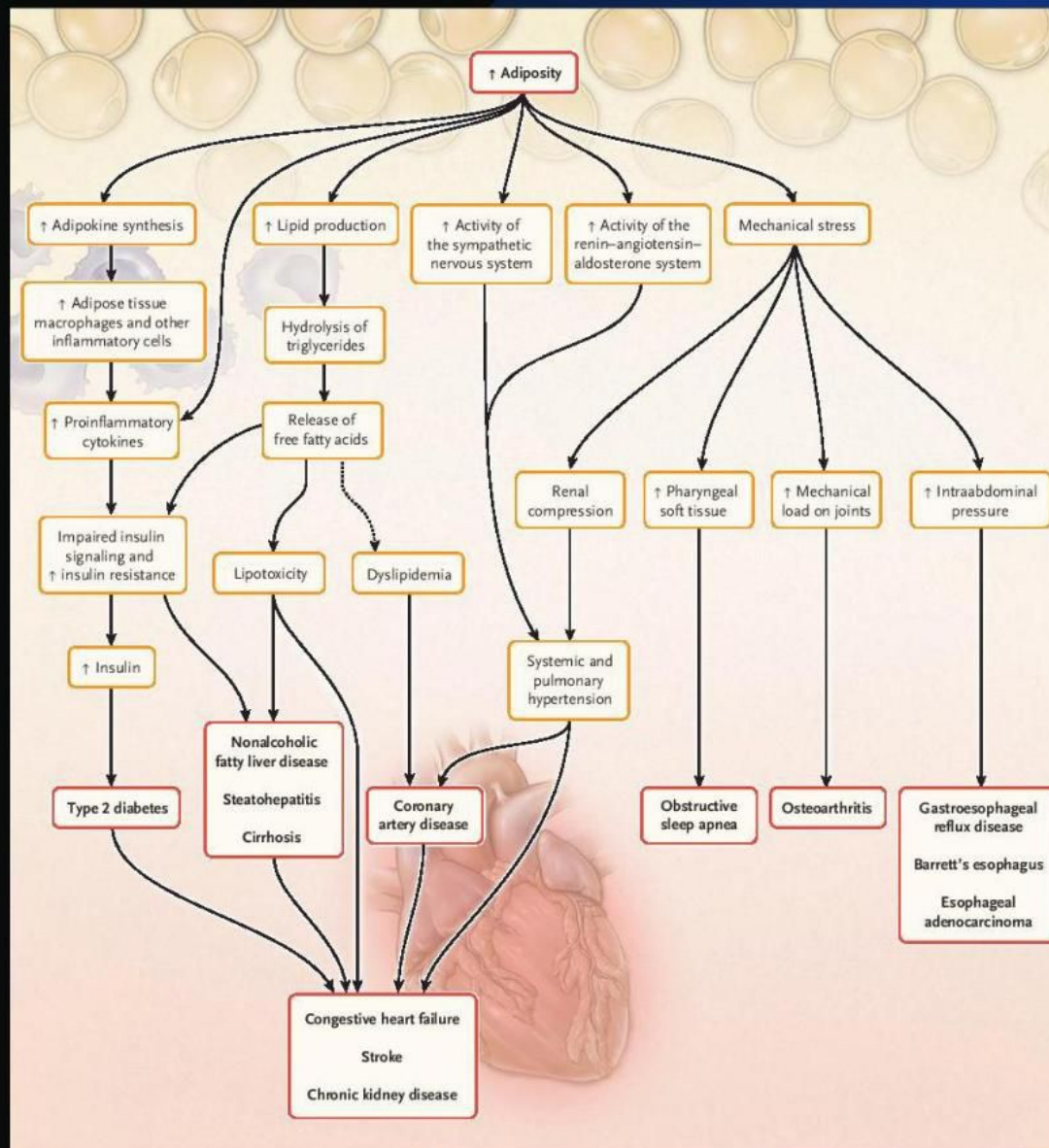


Bakterije creva (mikrobiota) i gojaznost



Patofiziologija gojaznosti i udruženih komorbiditeta

Kompleksna
familija medijatora



Heymsfield SB, Wadden TA. Mechanisms, Pathophysiology and Management of Obesity. *N Engl J Med* 2017;376:254-66.



Metabolički sindrom

Poremećaj metabolizma i skup faktora rizika (3 of 5) koji se javljaju kao posledica inzulinske rezistencije i patološkog nakupljanja masnog tkiva u organizmu

- ✓ **Centralna (abdominalna) gojaznost**
- ✓ **Povišen krvni pritisak**
- ✓ **Povišene vrednosti šećera u krvi (natašte ili uzimanje lekova)**
- ✓ **Povišene vrednosti triglicerida u krvi**
- ✓ **Niski HDL („high density lipoprotein“) holesterol**

Drugi znaci

Inzulinska rezistencija ("prediabetes")

Udružena stanja

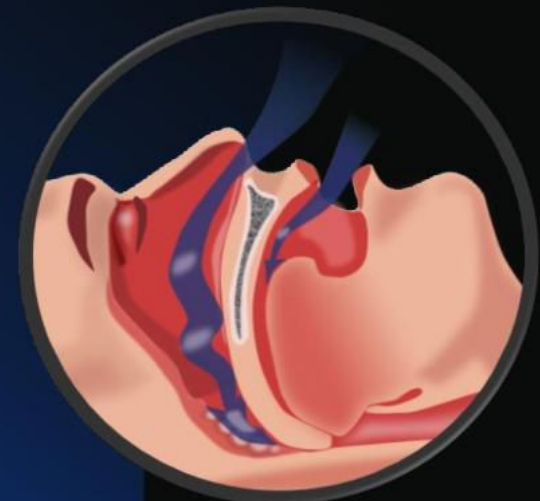
Hiperurikemija

Masna jetra i progresija u NAFLD

Policistični jajnici

Erektilna disfunkcija

Akantoza nigrikans

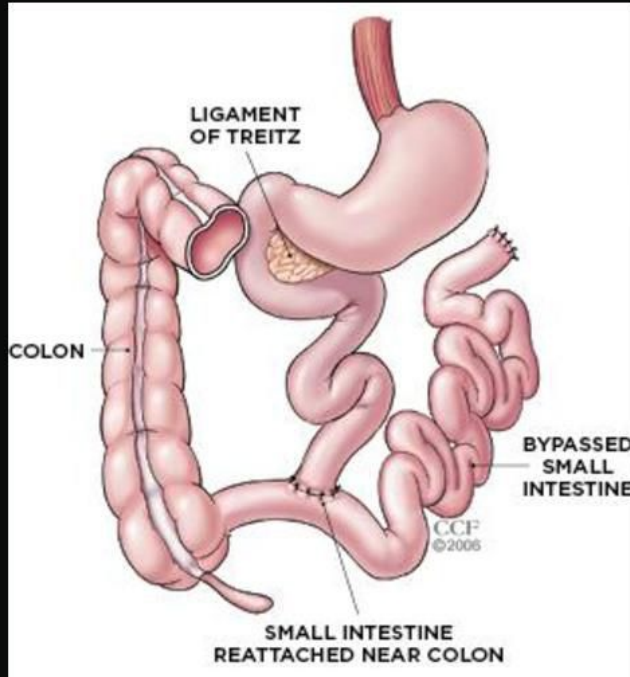


Sleep apnea

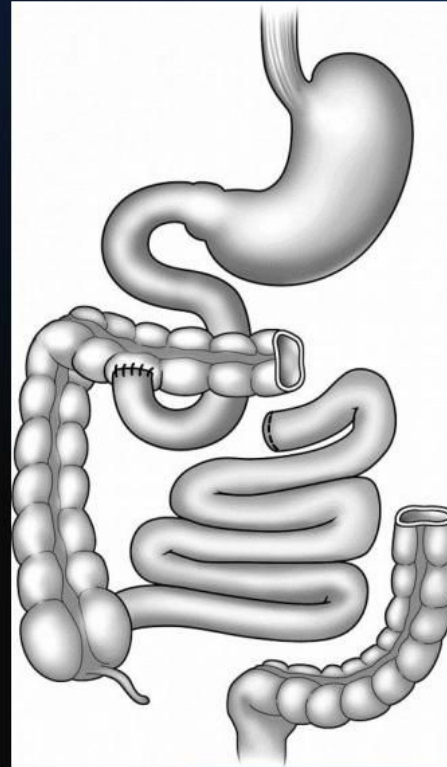


Hirurgija protiv gojaznosti

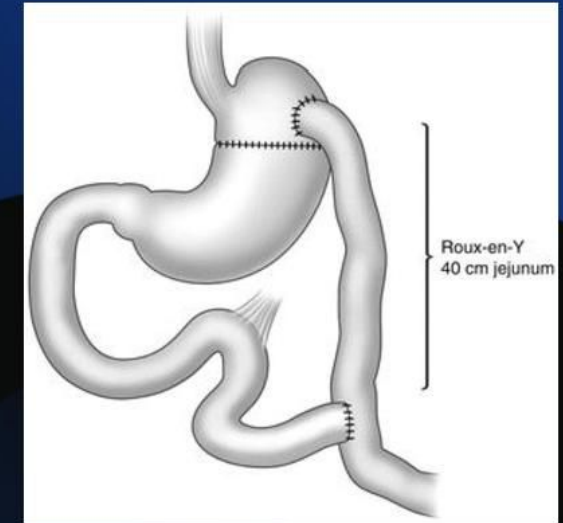
Rani period : 1950-e, 1960-e MALAPSORPTIVNE procedure



Reattached near colon
Jejuno-ilealni bajpas



Jejuno-količni bajpas



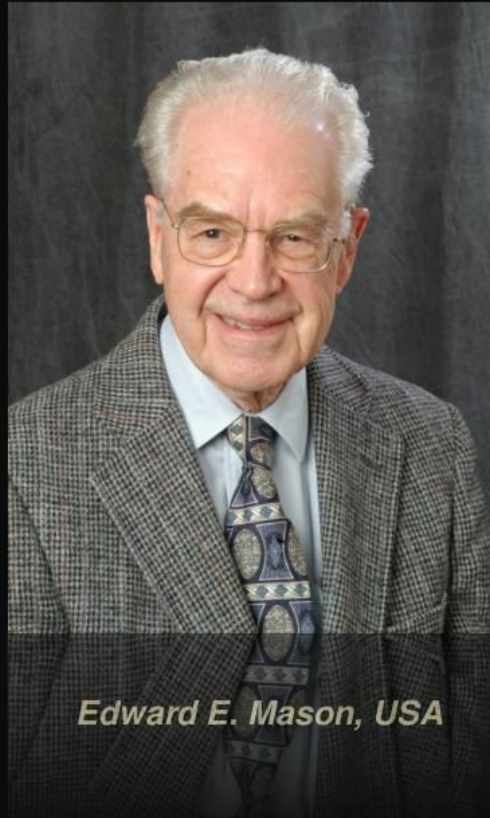
Roux-to side bajpas

Rezultat: 70%EWL + malapsorpcija, dehidracija, acidoza, elektrolitiski disbalans, jetrena insuficijencija, prekomerni rast bakterija

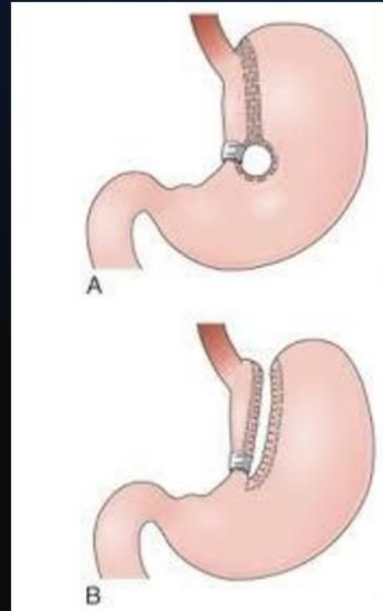


Hirurgija protiv gojaznosti

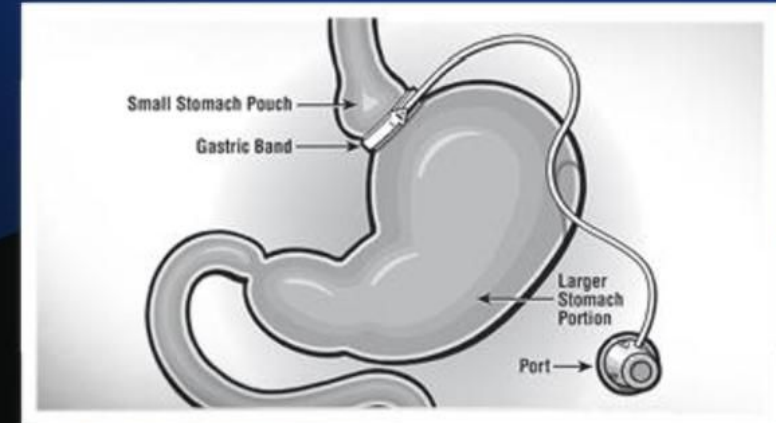
1970-e, 1980-e: shvatanje uloge **RESTRIKCIJE ŽELUCA** u hirurgiji



Edward E. Mason, USA



Vertikalna želudačna particija - **STEPLERI!**



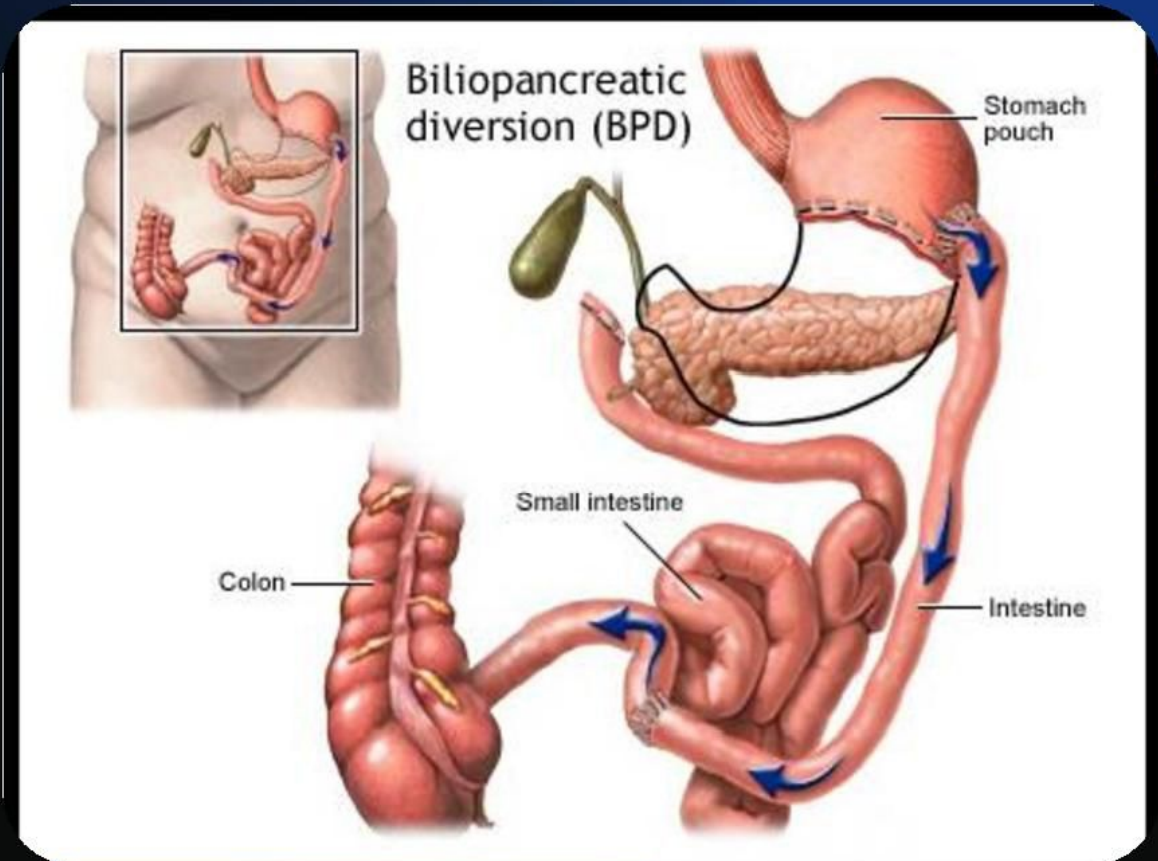
„Prilagodljiva želudačna traka“
Kuzmak, Belachew

1990-e: **REVOLUCIJA LAPAROSKOPSKE HIRURGIJE** – „minimalno invazivne“



Istorijat barijatrijske i metaboličke hirurgije

Nicola Scopinaro, 1979.



Prvi dugoročni rezultati hirurgije protiv gojaznosti

1990 – 2003

22 094 pacijenata

Srednji % EWL = 61,2

	<i>Kompletna rezolucija</i>	<i>Poboljšanje</i>
Šećerna bolest	76,8%	86%
Hyperlipidemia		70%
Hipertenzija	61,7%	78,5%
Opstruktivna „sleep apnea“	85,7%	83,6%

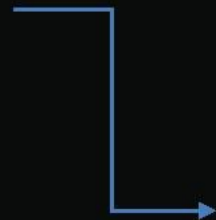
Buchwald H, Avidor Y, Braunwald E et al. Bariatric Surgery: A Systematic Review and Meta-analysis. JAMA. 2004; 292 (14): 1724-1737.



Hirurgija protiv gojaznosti

BARIJATRIJSKA HIRURGIJA (XX vek)

„baros“ (gr) – težina „iatrea“ (gr) - lečenje



METABOLIČKA HIRURGIJA (XXI vek)

hirurgija koja leči i gojaznost i metaboličke poremećaje



Hirurgija protiv gojaznosti

Tipovi operacija:

- 1. Restriktivne operacije*
- 2. Metaboličke operacije*
- 3. Kombinovane operacije*

Tehnika:

- Laparoskopiska*
- Laparotomijska („otvorena“)*



Preporuke za lečenje gojaznosti



American Association of Clinical Endocrinologists

245 Riverside Avenue • Suite 200 • Jacksonville, FL 32202 • Ph: (904) 353-7878 • Fax: (904) 353-8185 • www.aace.com

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STEP 1

EVALUATION FOR COMPLICATIONS AND STAGING



STEP 2

SELECT:

Therapeutic targets for improvement in complications

+

Treatment modality

+

Treatment intensity for weight loss based on staging

Lifestyle Modification:

MD/RD counseling; web/remote program; structured multidisciplinary program

Medical Therapy:

phentermine; orlistat; lorcaserin; phentermine/topiramate ER; naltrexone/bupropion; liraglutide

Surgical Therapy (BMI ≥ 35):

Lap band; gastric sleeve; gastric bypass

STEP 3

If therapeutic targets for improvements in complications not met, intensify lifestyle and/or medical and/or surgical treatment modalities for greater weight loss

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Hirurgija superiorna nad konzervativnim lečenjem gojaznosti i metaboličkog sindroma!

ARTICLES | ONLINE FIRST

Association of metabolic–bariatric surgery with long-term survival in adults with and without diabetes: a one-stage meta-analysis of matched cohort and prospective controlled studies with 174772 participants

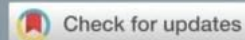
Nicholas L Syn, MBBS [†] • Prof David E Cummings, MD [†] • Louis Z Wang, MRCP [†] • Daryl J Lin, BEng [†] • Joseph J Zhao

Marie Loh, PhD • Zong Jie Koh, MRCS • Claire Alexandra Chew, MCI • Ying Ern Loo • Prof Bee Choo Tai, CStat

Guowei Kim, FRCS • Prof Jimmy Bok-Yan So, FRCS • Prof Lee M Kaplan, PhD • Prof John B Dixon, PhD

Asim Shabbir, FRCS   • [Show less](#) • [Show footnotes](#)

Published: May 06, 2021 • DOI: [https://doi.org/10.1016/S0140-6736\(21\)00591-2](https://doi.org/10.1016/S0140-6736(21)00591-2)



Summary

Background

Metabolic–bariatric surgery delivers substantial weight loss and can induce remission or improvement of obesity-related risks and complications. However, more robust estimates of its effect on long-term mortality and life expectancy—especially stratified by pre-existing diabetes status—are needed to guide policy and facilitate patient counselling. We compared long-term survival outcomes of severely obese patients who received metabolic–bariatric surgery versus usual care.

Summary of findings

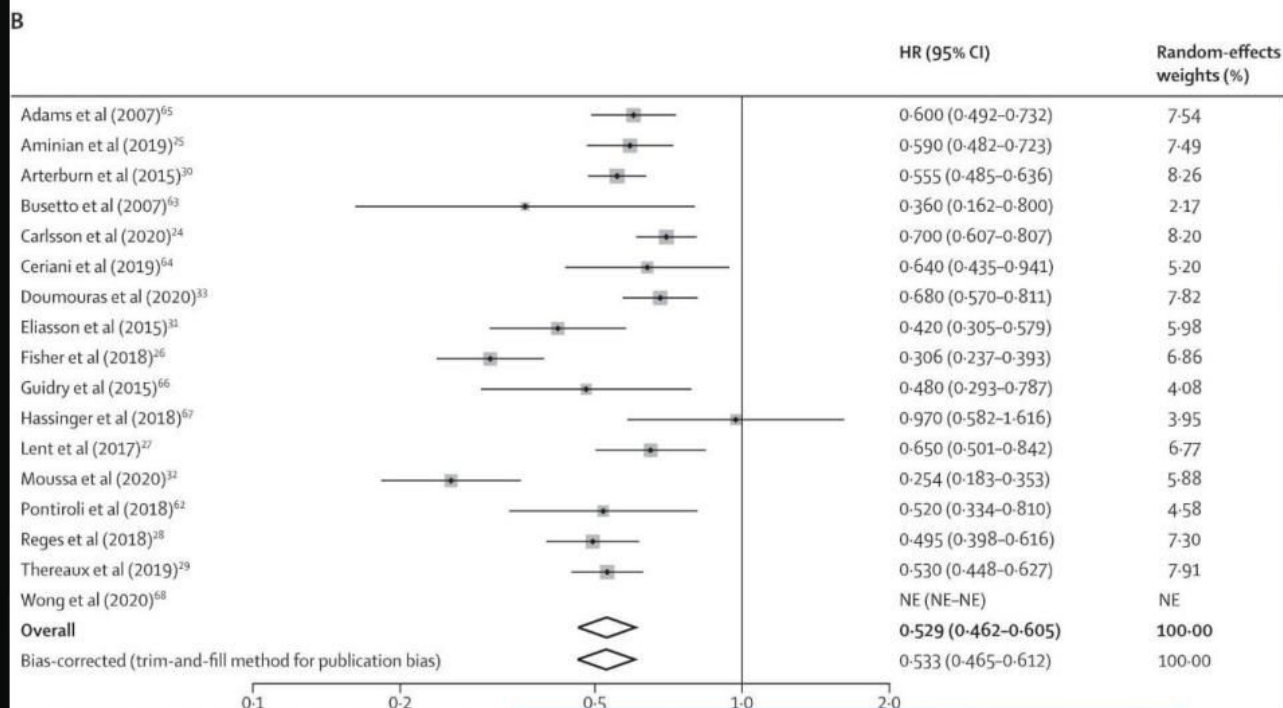
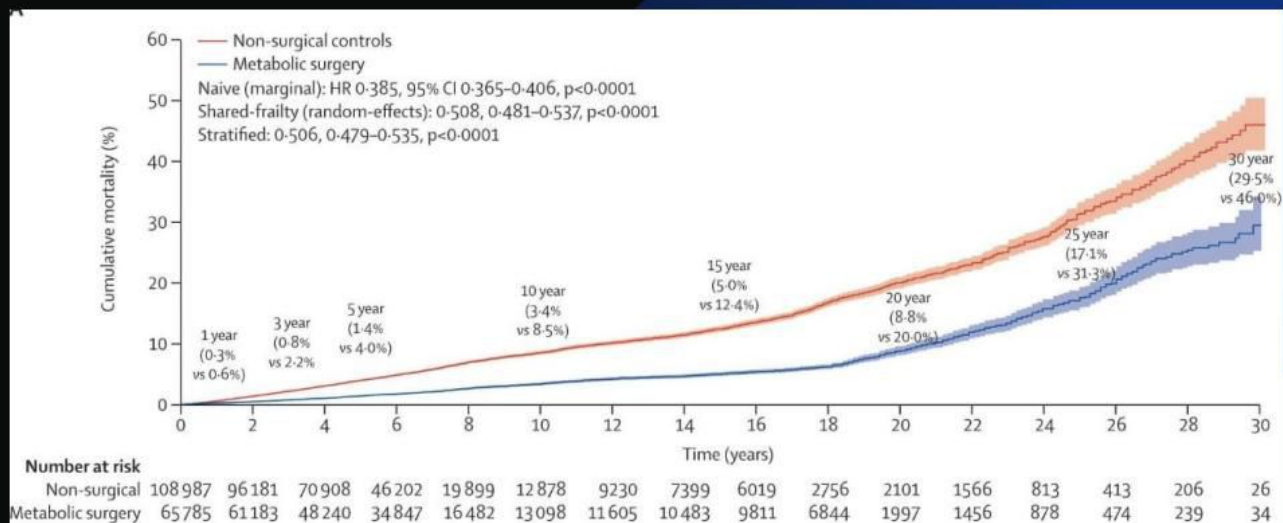
Long-term survival outcomes of severely obese patients who received metabolic–bariatric surgery versus usual care are needed to guide policy and facilitate patient counselling. We compared the effect on long-term mortality and life expectancy—especially stratified by pre-existing

involvement of obesity-related risks and complications. H

Savremeno lečenje gojaznosti i metaboličkog sindroma

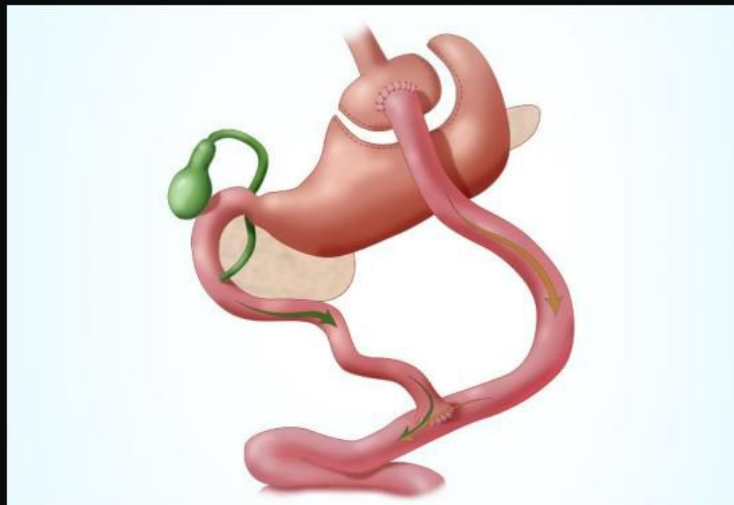


Hirurgija superiorna nad konzervativnim lečenjem gojaznosti i metaboličkog sindroma!



Najčešće barijatrijske i metaboličke hirurške procedure

Ru Y želudačni bajpas (RYGBP)



Pories WJ, Swanson MS. et al. Who would have thought it? An operation proves to be most effective therapy for adult onset DM. *Ann Surg.* 1995;222:339

Želudačna rukavna resekcija (GS)



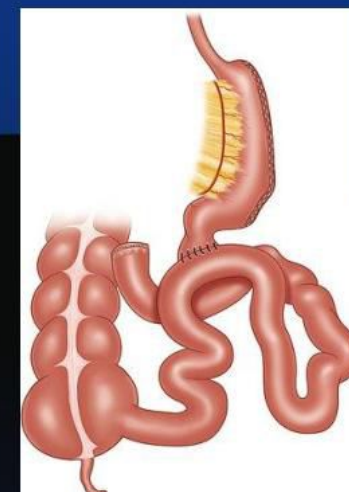
Ren CJ, Patterson E, **Gagner M.** Early results of laparoscopic biliopancreatic diversion with duodenal switch: a case series of 40 consecutive patients. *Obes Surg.* 2000 Dec;10(6):514-23;

„Mini“ želudačni bajpas (MGB/OAGB)



Rutledge R. The mini gastric bypass: experience with first 1274 cases. *Obes Surg.* 2001;11:276
Carabajo M. OAGB by laparoscopy: results of 209 pts. *Obes Surg* 2005;15:389

Duodenalno-ilealni bajpas (SADI-S)



Sanches-Pernaute A, ...**Torres A.** SADI bypass with sleeve gastrectomy: metabolic improvement and weight loss in first 100 pts. *Surg Obes Relat Dis.* 2013; 9(5):731



Najčešće barijatrijske i metaboličke hirurške procedure

Ru Y želudačni bajpas (RYGBP)



Želudačna rukavna resekcija (GS)



„Mini“ želudačni bajpas (MGB/OAGB)



Duodenalno-ilealni bajpas (SADI-S)



Laparoskopska „gastric sleeve“ resekcija želuca

 **Journal of Investigative Surgery** 

ISSN: 0894-1939 (Print) 1521-0553 (Online) Journal homepage: <http://www.tandfonline.com/loi/ijvs20>

Surgical Technique: Laparoscopic Gastric Sleeve Resection in Super-Obese Patients

M. Ilic PhD & S.S. Putnik MD

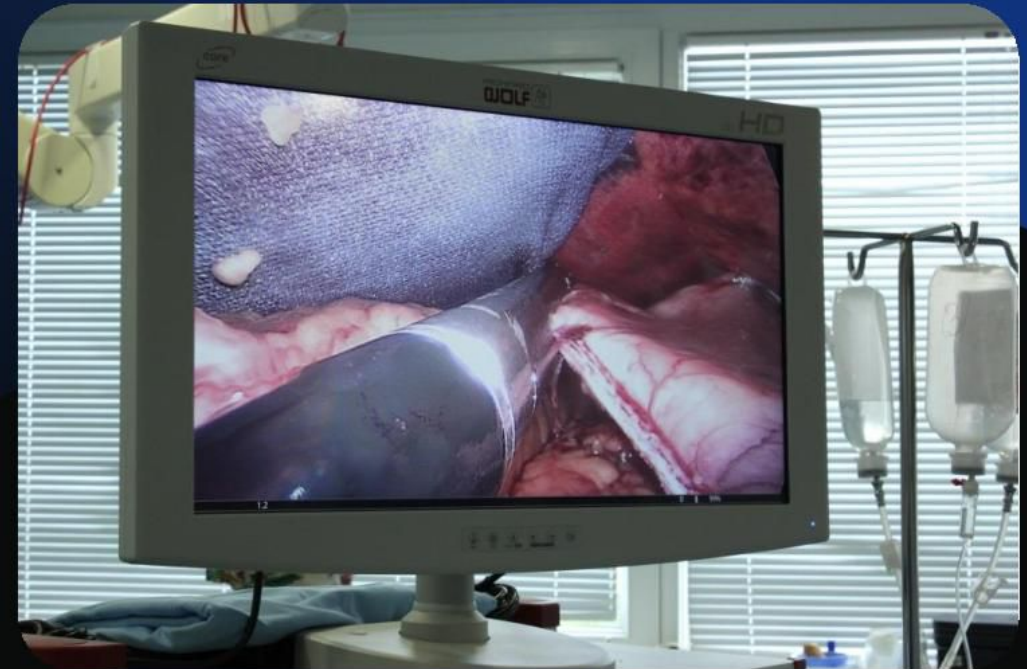
To cite this article: M. Ilic PhD & S.S. Putnik MD (2017): Surgical Technique: Laparoscopic Gastric Sleeve Resection in Super-Obese Patients, Journal of Investigative Surgery, DOI: [10.1080/08941939.2017.1289284](https://doi.org/10.1080/08941939.2017.1289284)

To link to this article: <http://dx.doi.org/10.1080/08941939.2017.1289284>

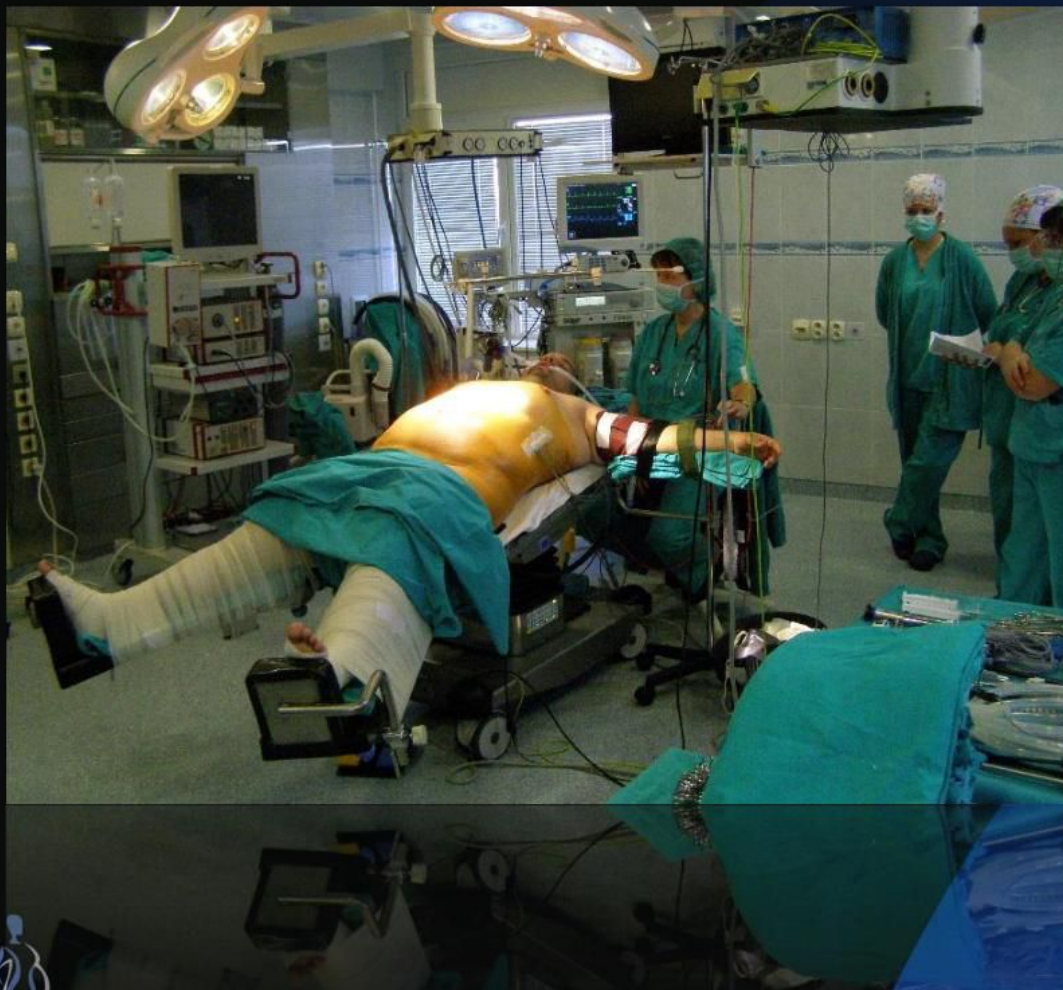
 Published online: 07 Apr 2017.

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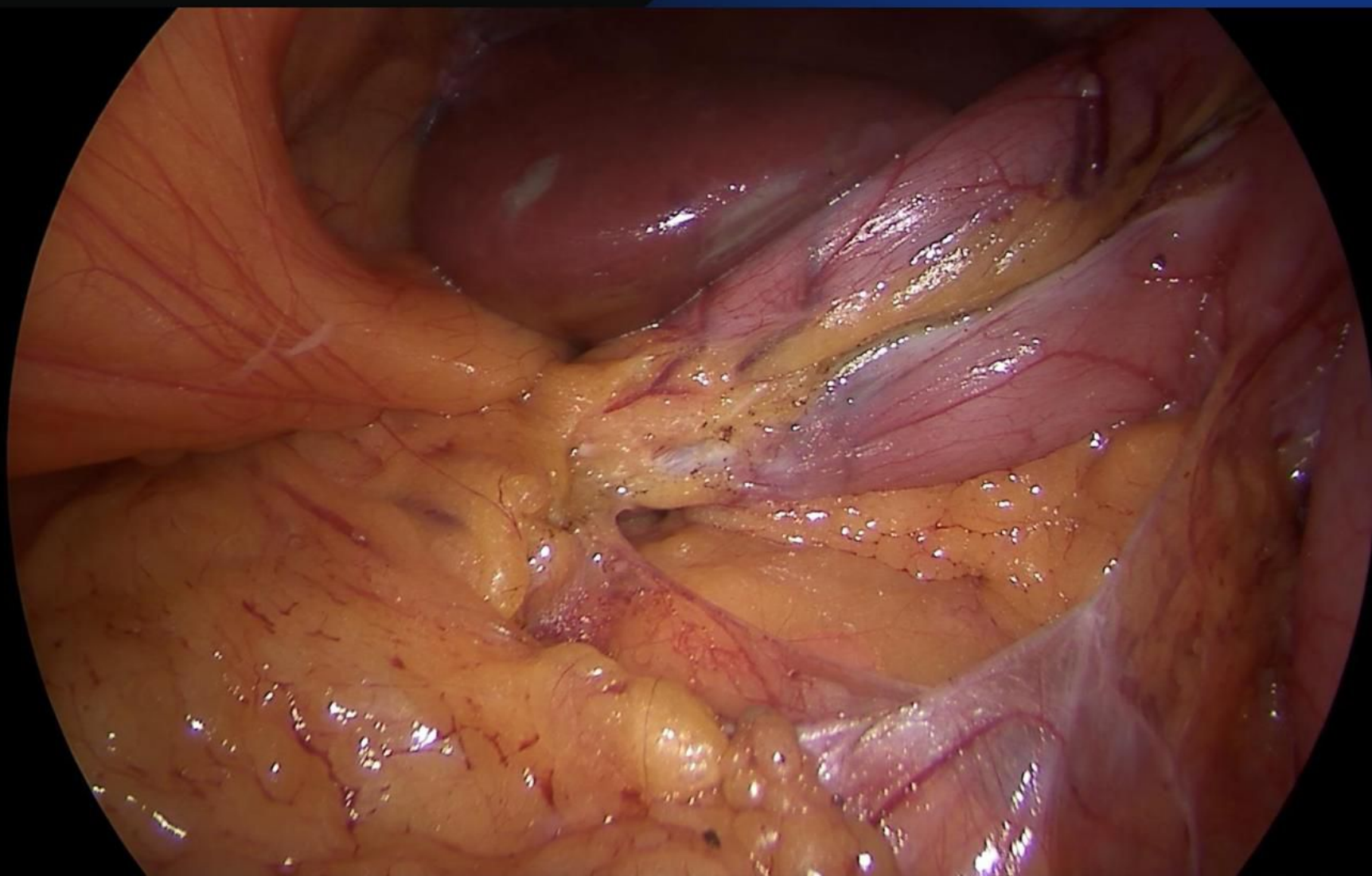
Početak barijatrijskih operacija 31.10.2008. Sremska Kamenica



Karl Miller (Austria)



Laparoskopska „gastric sleeve“ resekcija želuca



x1.0

5

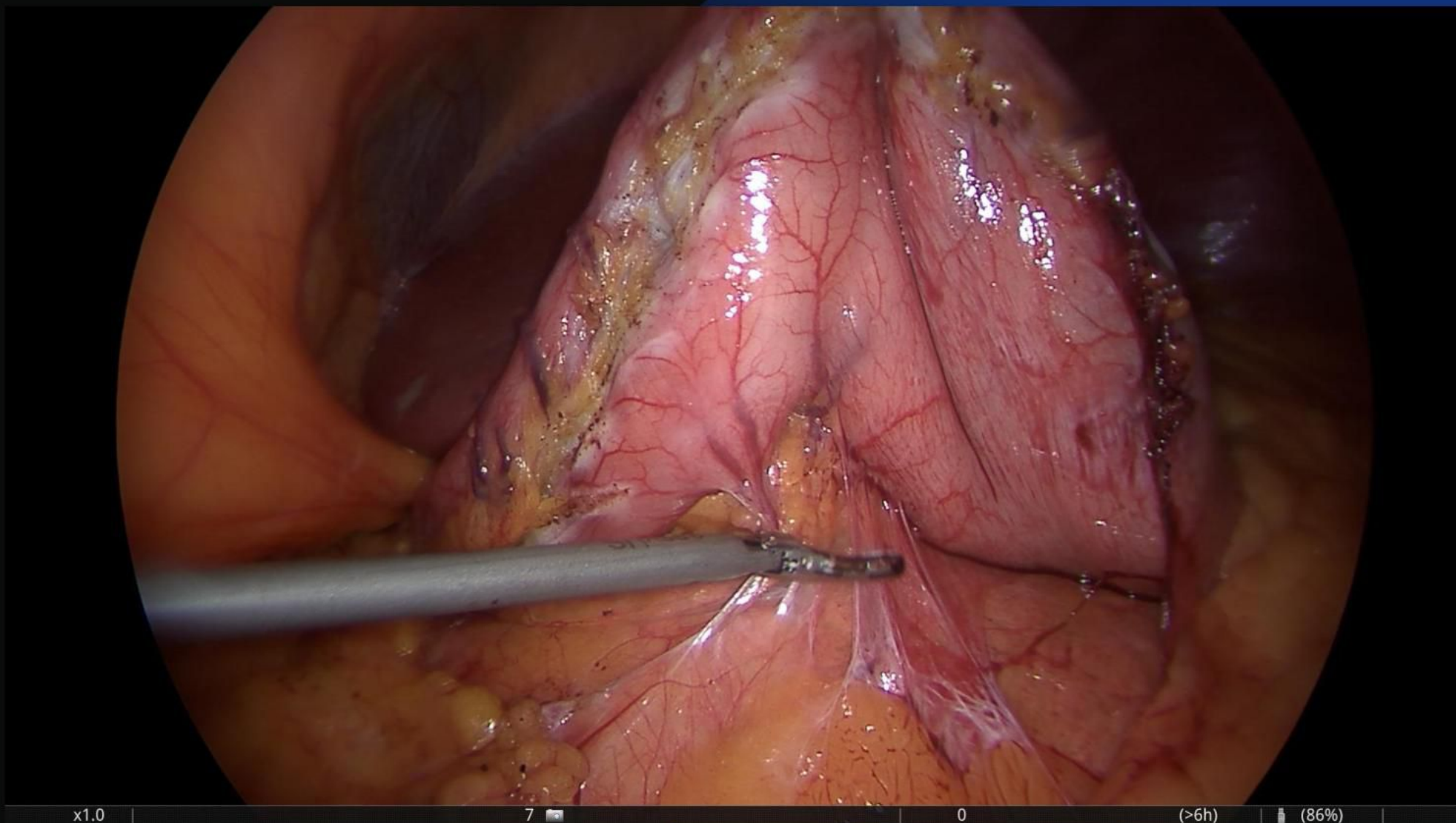
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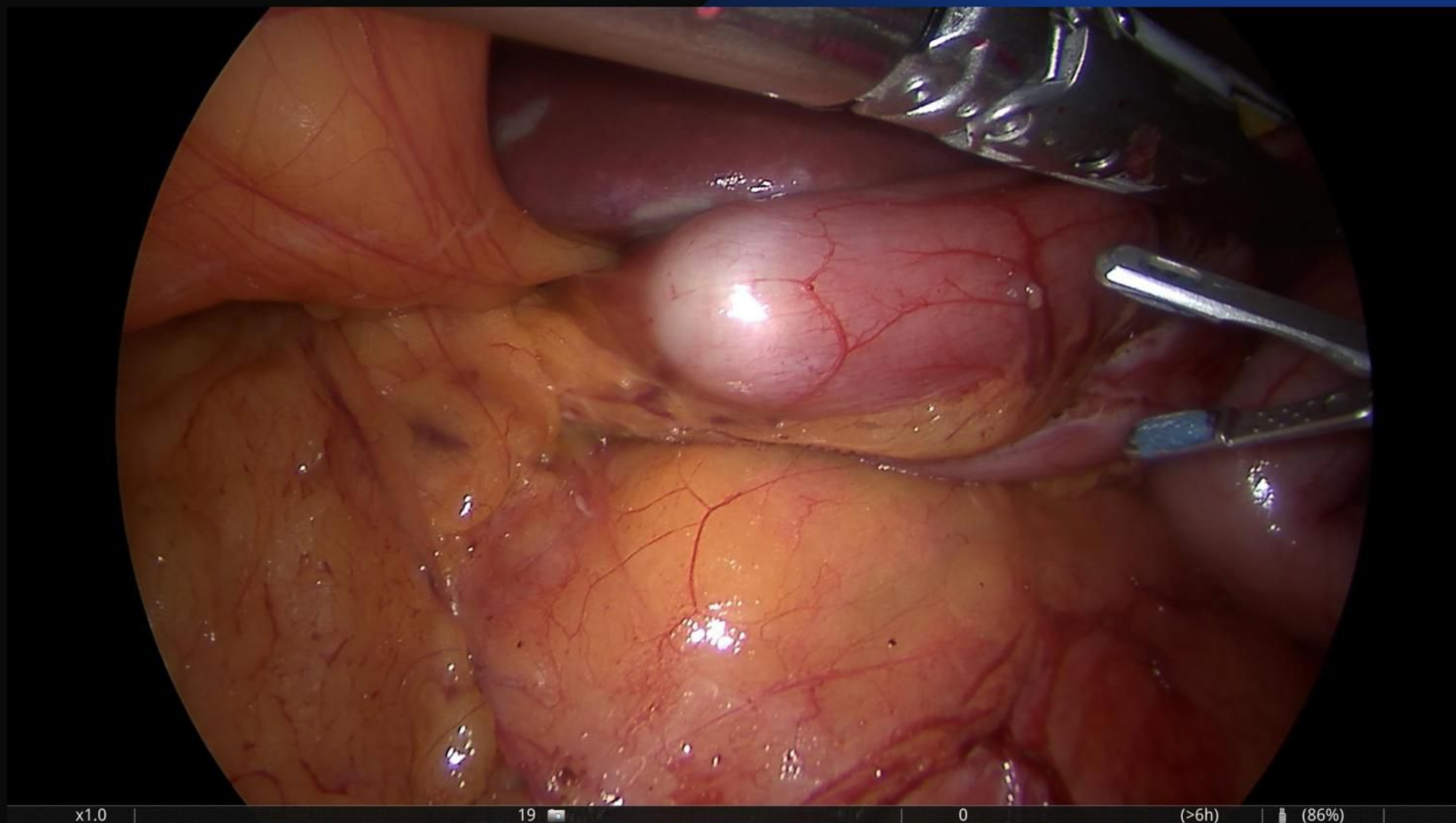
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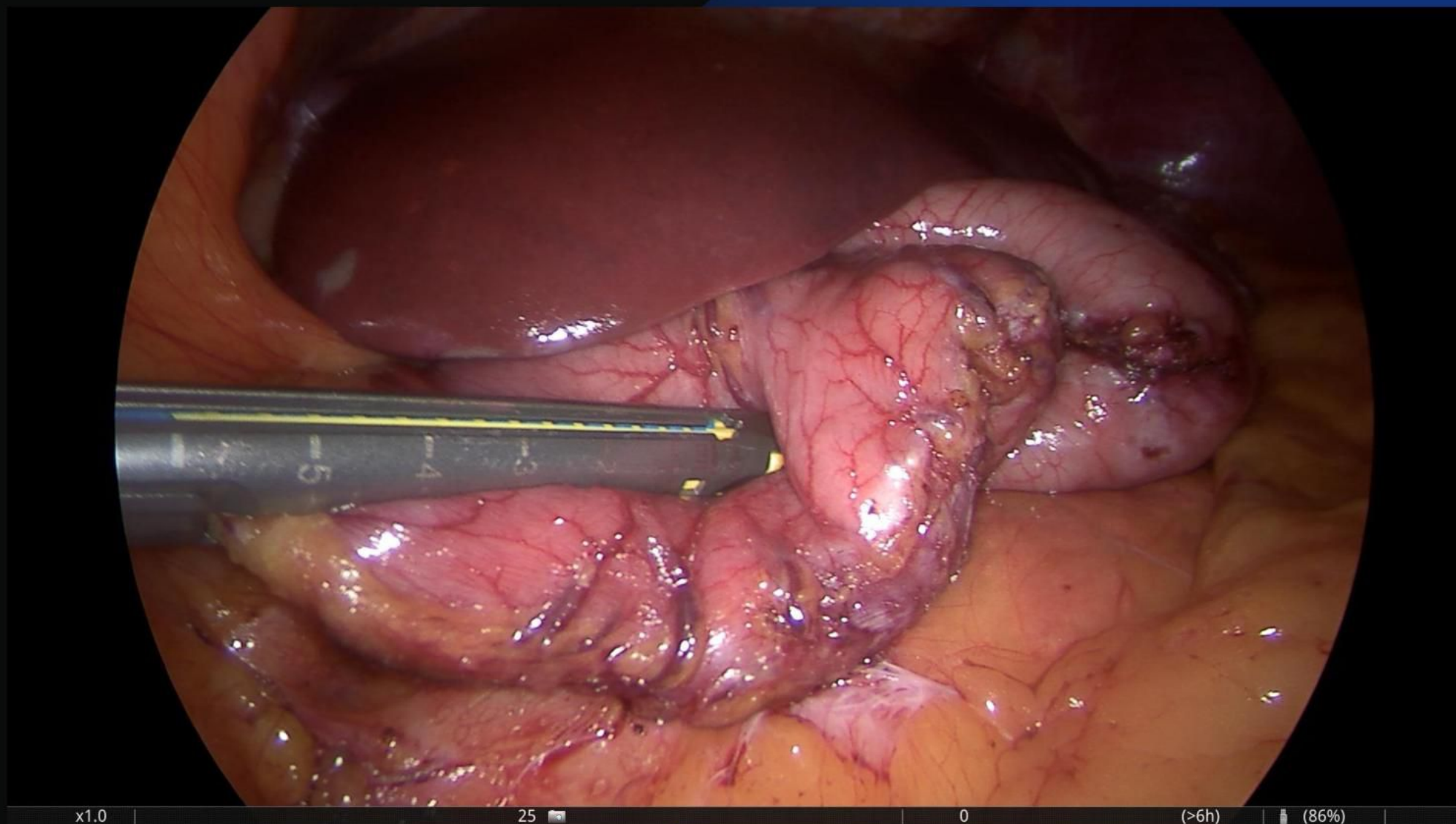
Laparoskopska „gastric sleeve“ resekcija želuca



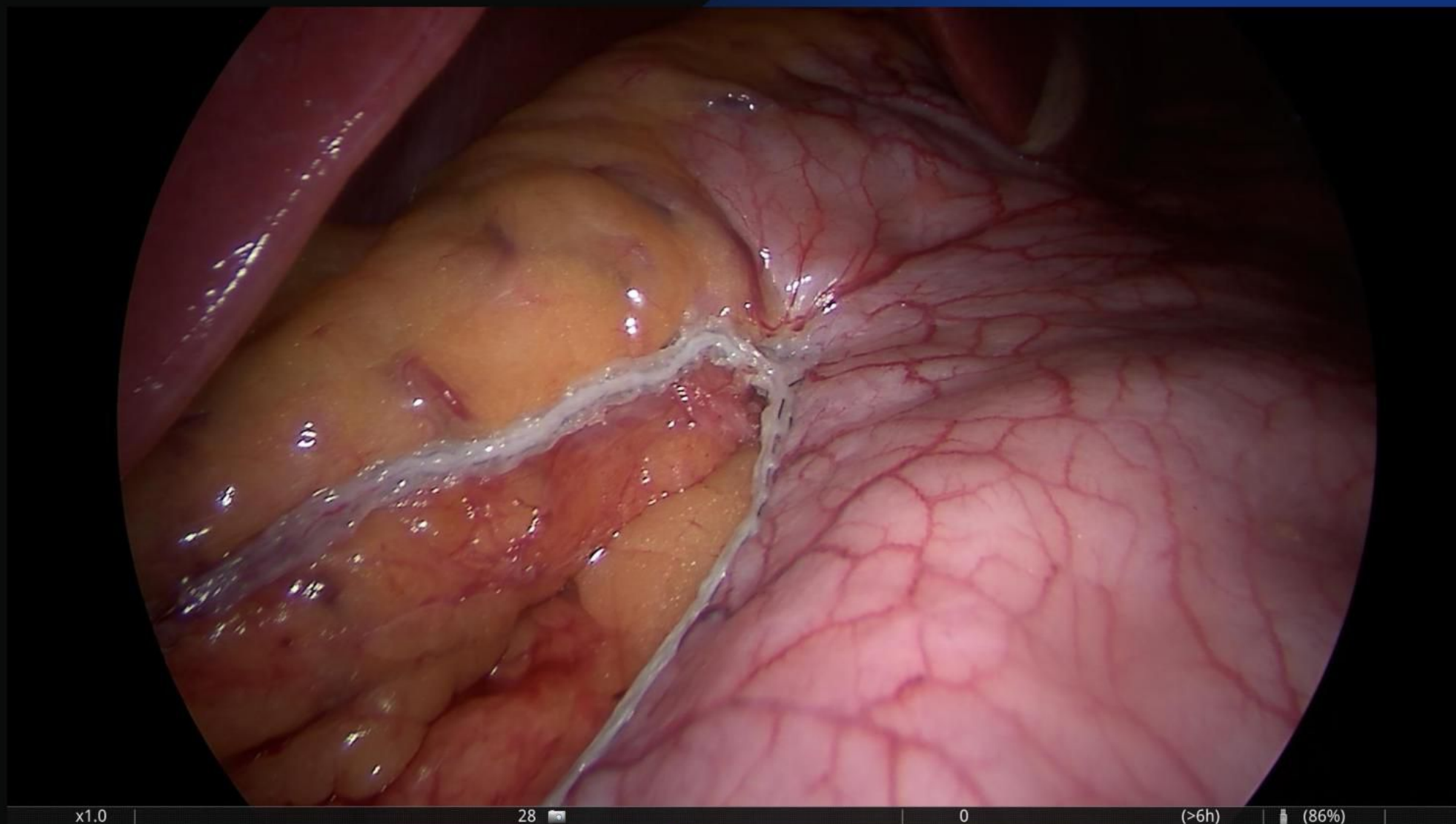
Laparoskopska „gastric sleeve“ resekcija želuca



Laparoskopska „gastric sleeve“ resekcija želuca



Laparoskopska „gastric sleeve“ resekcija želuca



x1.0

28

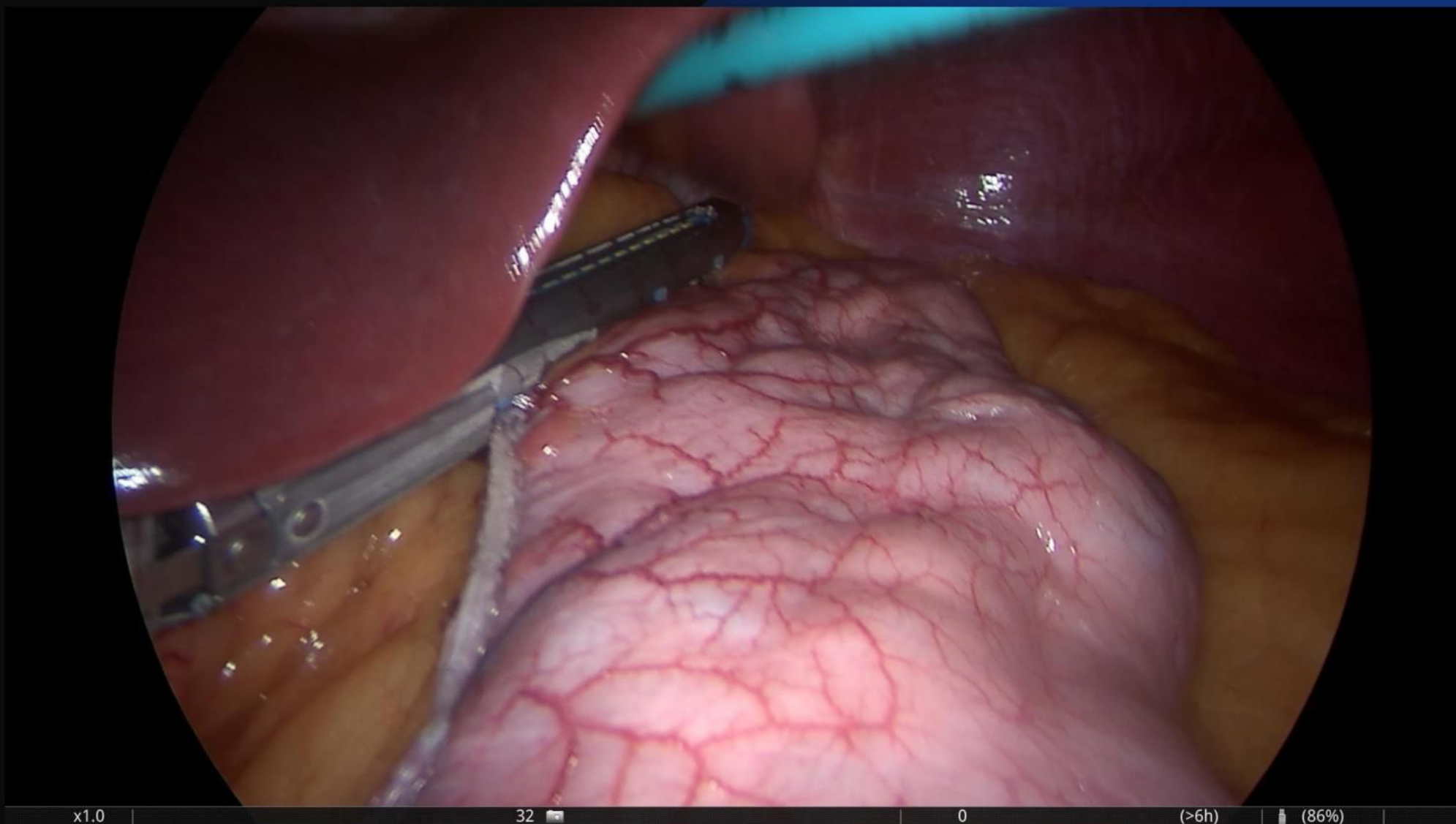
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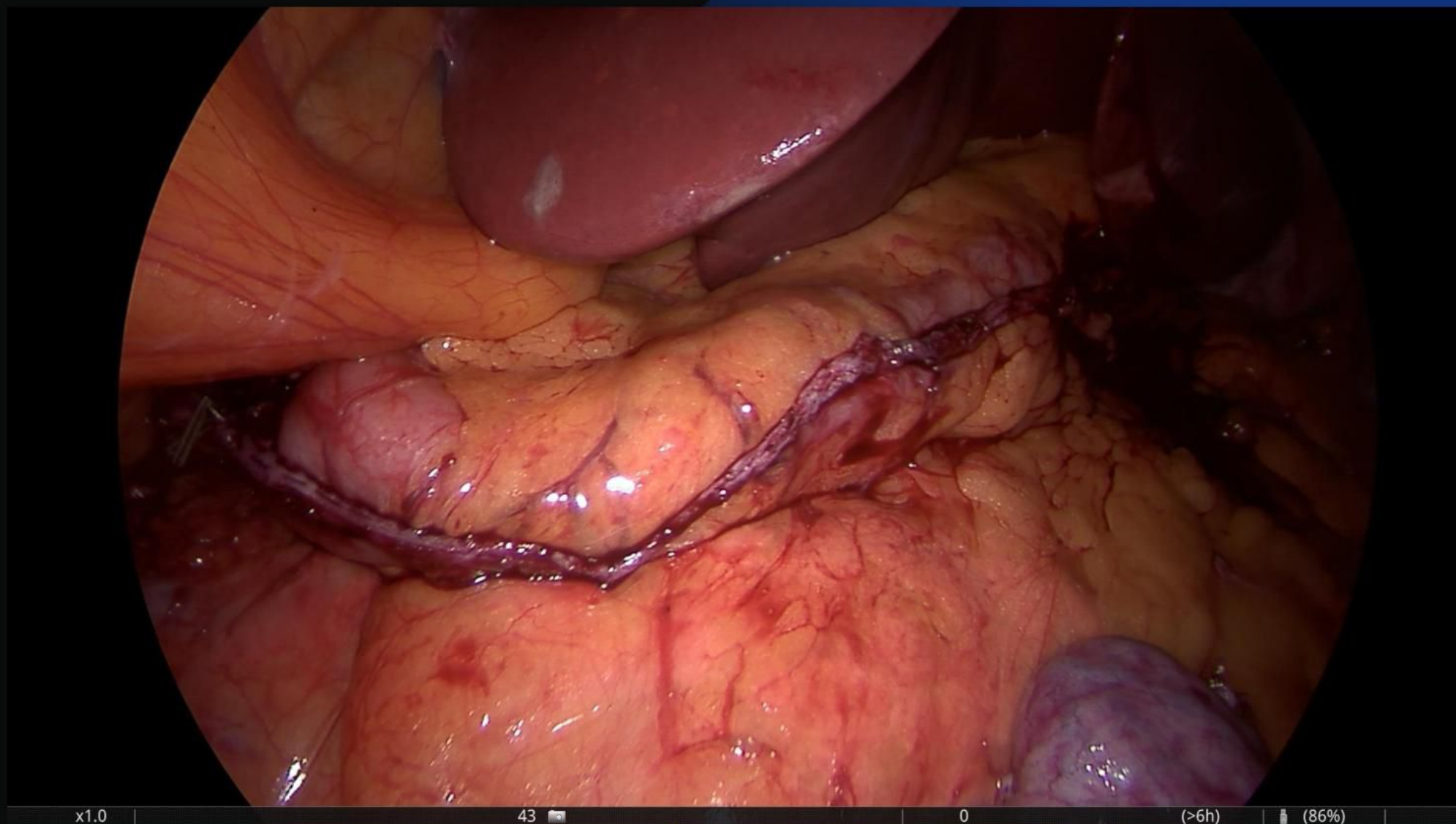
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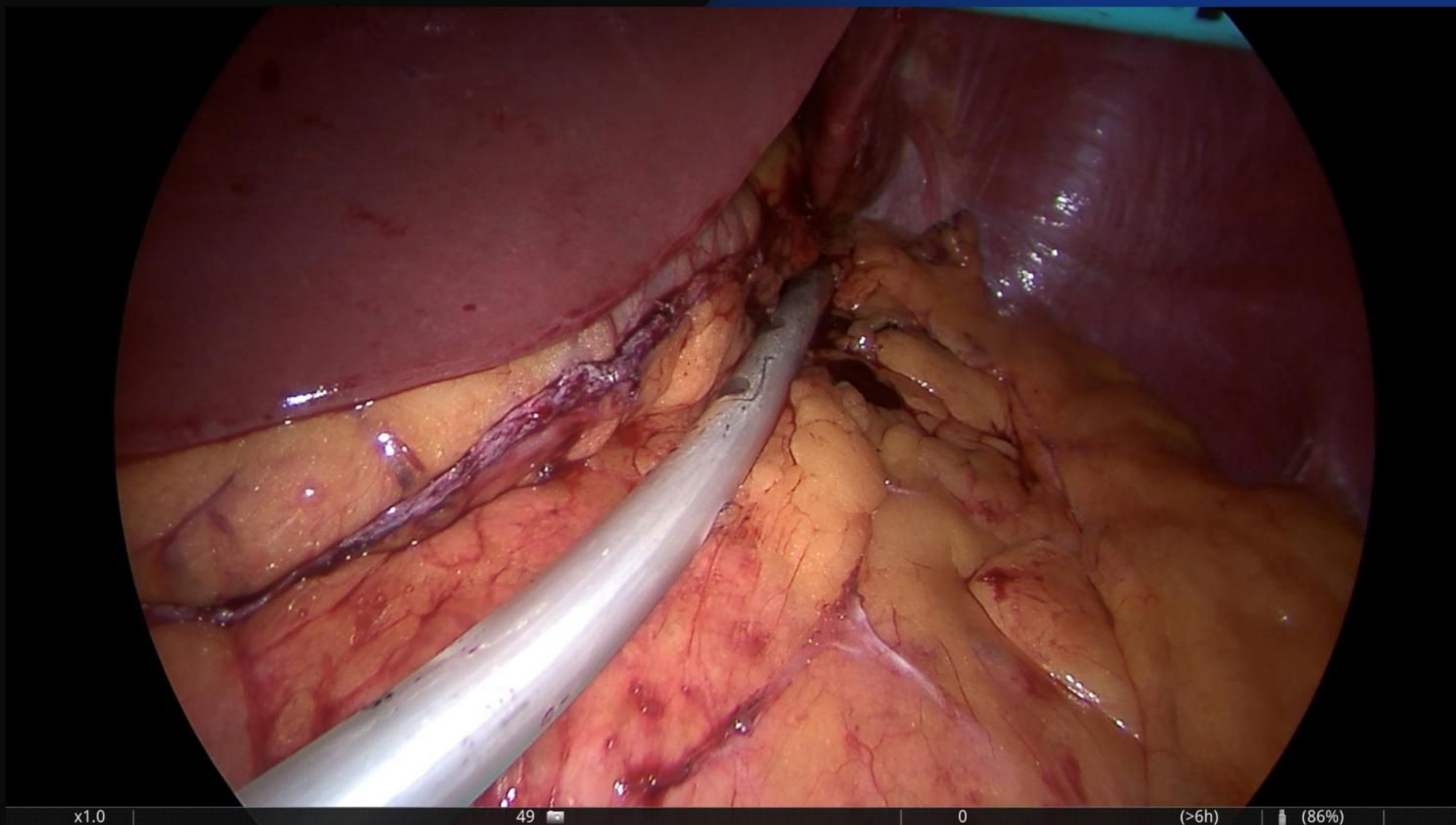
Laparoskopska „gastric sleeve“ resekcija želuca



Laparoskopska „gastric sleeve“ resekcija želuca



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Laparoskopska „gastric sleeve“ resekcija želuca



Laparoskopska „gastric sleeve“ resekcija želuca



Laparoskopska „gastric sleeve“ resekcija želuca



Prvi edukativni kurs iz barijatrijske hirurgije (2013.)



Institut za plućne bolesti Vojvodine
Institute for Lung Disease of Vojvodina
Sremska Kamenica, Srbija

Univerzitet u Novom Sadu - University of Novi Sad
Medicinski fakultet - Medical Faculty in Novi Sad



Alma Mons CME Course

**Hirurgija
metaboličkog sindroma
i gubitka telesne težine**
1. KME kurs sa internacionalnim učešćem

**Surgery
of Metabolic Syndrome
and Weight Loss**
1st CME International Course

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Catalin Copaescu (Romania)
Miroslav Bekavac Bešlin (Croatia)
Fuad Pašić (Bosnia and Herzegovina)

Savremeno lečenje gojaznosti i metaboličkog sindroma

Drugi edukativni kurs iz barijatrijske hirurgije (2014.)




Instituta za plućne bolesti Vojvodine / Institute for Lung Disease of Vojvodina
Klinika za grudnu hirurgiju / Clinic for Thoracic Surgery
Sremska Kamenica, Srbija

Univerzitet u Novom Sadu / University of Novi Sad
Medicinski fakultet / Medical Faculty in Novi Sad

2. ALMA MONS KME KURS sa internacionalnim učesćem

Hirurgija gojaznosti i metaboličkog sindroma - Gastric By Pass

2nd ALMA MONS CME COURSE with international participation

Surgery of Obesity and Metabolic Syndrome - Gastric By Pass

20.-22. novembra 2014. / 20-22 November 2014, Hotel Leopold, Novi Sad



Operatie tegen overgewicht

Een poli-afpraak?
tel: 020-512 4666

Een vraag?
mail: barutne@slz.nl

[Over ons](#) | [Over de afdeling](#) | [Operatie tegen overgewicht](#) | [Uw aanpak](#) | [Viel gestelde vragen](#) | [Links](#) | [Hirurgen](#) | [24 uur hulp](#) | [Contact](#)

Team en Visie

COE - Centre Of Excellence



Aan het Slotervaartziekenhuis werd op 25 april 2013 de status van **Centre Of Excellence** toegekend door de European Accreditation Council for Bariatric Surgery, EAC-BS. Daarmee werden wij in Nederland het tweede top centrum voor operaties voor ernstig overgewicht, erkend door de IFSO, de overkoepelende organisatie van bariatrische en metabole chirurgie in Europa. Wat dit voor u betekent leest u hier.

In het jaar 2013 hebben wij meer dan 1200 nieuwe patiënten met ernstig overgewicht gezien. Wij zijn daarmee één van de grootste centra voor operaties tegen overgewicht in Nederland. In 2014 verwachten wij een verdere toename van het aantal te behandelen patiënten. Om de kwaliteit van de zorg en de aandacht die elke patient van ons kan verwachten te blijven garanderen hebben wij onze capaciteit en ons team in 2013 uitgebreid. Ook in 2014 blijven patiënten van alle ziektekostenverzekers in Nederland welkom in het Slotervaartziekenhuis.

Vier chirurgen, A van de Laar, S Bruin, M de Brauw en Y Acherman zijn gespecialiseerd in (kijk)operaties tegen overgewicht, ook wel **bariatrische chirurgie** genoemd. Als één van de weinige ziekenhuizen hebben wij een bariatrische dienstgroep ingesteld, dus onze gespecialiseerde chirurgen zijn dag en nacht oproepbaar.


"Deens beleid"

Ons behandelingsprogramma voor en na de operatie hebben wij ontleend aan het beste voorbeeld van een maagverkleiningskliniek in Europa. Daardoor kunnen de meeste patiënten met een gastric bypass de dag na de operatie al weer naar huis.


Yair Acherman (Holland)
Arnold van de Laar (Holland)

Savremeno lečenje gojaznosti i metaboličkog sindroma

Treći edukativni kurs iz barijatrijske hirurgije (2016.)




Prof. dr Miroslav Ilić
+381 63 501 301
drmiroslavilic@gmail.com



Klinika za grudna hirurgija
Institut za plućne bolesti Vojvodine
Srpska Kamenica

Hirurgija gojaznosti i metaboličkog sindroma | Obesity and Metabolic Surgery

Dr Robert Rutledge
Center of Laparoscopic Obesity Surgery
Henderson, NV - USA



THE MINI GASTRIC-BYPASS (MGB)
HISTORY, OUTCOMES AND PERSPECTIVES

Petak / Friday
27.05.2016.


Dr Robert Rutledge
Inventor of the Mini-Gastric Bypass (1997)


27. May 2016.
Clinic for Thoracic Surgery
Institute for Lung Diseases
Sr. Kamenica, Put Dr Goldmana 4
Serbia

Programme

- 8:00 - 9:00 Registration
- 9:00 - 12:00 Live Surger from the O.R.
- 12:00 - 13:00 Lecture - Dr Rutledge
- 13:00 - 14:00 Lunch
- 16:00 - 18:00 Cases disscusion, technical issues, questions and answers
- 20:00 Dinner Wine Restaurant Kovačević

DrR@elos.net







Robert Rutledge (USA) – MGB/OAGB



Konferencija o barijatrijskoj i metaboličkoj hirurgiji / Crna Gora (2019.)



Hotel Hilton
Podgorica Crna Gora
Bulevar Svetog Petra Cetinjskog 2,
Podgorica, 81000, Montenegro

A Day Conference on Metabolic and Bariatric Surgery

Podgorica, Montenegro
25.04.2019.
Hotel Hilton

Centre for Bariatric and Metabolic Surgery



CODRA Hospital



ETHICON
a Johnson & Johnson company

From two to one anastomosis gastric bypass



Nasser Sakran
Chairman at Israeli Society for Metabolic and Bariatric Surgery
Director, Advanced Laparoscopic and Bariatric Surgery Unit at Emek Medical Center

Programme

<p>12,30-13,00 Welcome cocktail</p> <p>13,00-13,30 Nasser Sakran</p> <p>13,30-13,45 Branislav Majstorović</p> <p>13,45-14,00 Miroslav Ilić</p> <p>14,00-14,30 Surgery results and discussion with the patients about their experiences</p> <p>14,30-15,00 Lunch</p>	<p><i>Legal Features and Aspects of Medical Tourism in Bariatric Surgery</i></p>  <p>Branislav Ž. Majstorović LL.M. Attorney at Law and Managing Partner of Majstorović & Partners</p> <p><i>10 years of Experience with metabolic Surgery in Treatment of Obesity and Metabolic Syndrome</i></p>  <p>Miroslav D. Ilić CODRA Hospital</p>
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CODRA Hospital

Savremeno lečenje gojaznosti i metaboličkog sindroma

ETHICON
a Johnson & Johnson company

Jednodnevni kurs iz barijatrijske i metaboličke hirurgije/ Crna Gora (2019.)

Hospital CODRA
Radosava Burića bb,
81000 Podgorica, Montenegro




**Hospital
CODRA**


A ONE YEAR
OF
METABOLIC SURGERY
IN MONTENEGRO

Centre for Bariatric and Metabolic Surgery

12.10.2019.
Podgorica,
Montenegro

Hotel
PREMIER







Hotel Premier
Bulevar Svetog Petra Cetinjskog 145,
81000 Podgorica,
Montenegro

Programme

12,00-12,30	Welcome cocktail
12,30-13,00	Rui Ribeiro
13,00-13,30	Nasser Sakran
13,30-13,45	Miroslav Ilić
14,00-15,00	Lunch

*Surgery of DMT2:
How to choose right operation?*



Rui Ribeiro
Coordinator do CMDM e Chirurgia General
CLUSA - Lusíadas
Portugal

*Failure of pure restrictive procedure
in metabolic surgery and what to do?*



Nasser Sakran
Chairman at Israeli Society for Metabolic and Bariatric Surgery
Director, Advanced Laparoscopic and Bariatric Surgery Unit at
Emek Medical Center

*A one year of metabolic surgery
in Montenegro, Codra Hospital*



Miroslav D. Ilić
CODRA Hospital



Komunikacija sa pacijentima (i) preko društvenih mreža



Prof. dr Miroslav Ilić

HIRURGIJA GOJAZNOSTI I METABOLIZMA

Novi Sad / Beograd / Podgorica

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www.drmiroslavilic.life

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UŽIVO 
nedelja
09. maj
19h



www.drmiroslavilic.life



Prof. dr Miroslav Ilić
Hirurgija gojaznosti i metabolizma



Prof. dr Miroslav Ilić
gojaznost_hirurgija_srb



Prof. dr Miroslav Ilić
Hirurgija gojaznosti



Surgery for Obesity and Diabetes
Professor Miroslav Ilic, MD, PhD



Prof. dr Miroslav Ilić
obesity_surgery_eu



Prof. dr Miroslav Ilić
Hirurgija gojaznosti



Hirurgija gojaznosti

Savremeno lečenje gojaznosti i metaboličkog sindroma





Prof. dr. Miroslav Vilić





Prof. dr. Miroslav /lić





Prof. dr. Miroslav Ilić











Personalno iskustvo 2008-2021

*Institut za plućne bolesti Vojvodine, Sremska Kamenica (2008)
Opšta bolnica „CODRA“, Podgorica, Crna Gora (2018)
Opšta bolnica „Aurora“, Beograd (2019)*

UKUPNO: 980 pacijenata

Mortalitet: 0,2 % (tromboembolija pluća, moždana smrt)

Komplikacije:

*gastročne fistule 0,5 %,
krvavljenje 0,5%,
ponovno gojenje i reoperacija 0,3%,
pankreatitis i pankreasna fistula 0,2%
uvrtanje „sliva“ 0,2%,
tromboembolija arterija noge 0,1%*



Operisani pacijenti i masovni mediji



Šećerna bolest (DMT2) se leči metaboličkom hirurgijom!

A LONG ROAD

Observations that diabetes can be improved or even resolved by surgical operations have been reported for almost a century.

1920

1930

1940

1950

1955

Weight-loss (bariatric) surgery introduced.

1960

1970

1980

2004

Experimental evidence in rats links gastrointestinal surgery and glucose metabolism⁶.

2000

2007

First Diabetes Surgery Summit.

2015

Second Diabetes Surgery Summit.

2010

2020

2016

Guidelines for the surgical treatment of diabetes published in *Diabetes Care*¹.

1925-50

Several reports document diabetes resolution after stomach surgery.



World's heaviest family in 1929.

1970-95

Several reports consistently document remission of diabetes after bariatric surgery.

2006-07

Studies in humans start to explore the use of surgery as an intentional treatment of diabetes¹⁰.

2008-15

Publication of several randomized clinical trials demonstrates effects of surgical treatment of diabetes.

Rubino F. Time to think differently about diabetes. Comment: 26 MAY 2016 | VOL 533 | NATURE | 461



Metabolička hirurgija protiv šećerne bolesti (DMT2)

Diabetes Care Volume 39, June 2016

861



Metabolic Surgery in the Treatment Algorithm for Type 2 Diabetes: A Joint Statement by International Diabetes Organizations

Diabetes Care 2016;39:861–877 | DOI: 10.2337/dc16-0236

Francesco Rubino,¹ David M. Nathan,² Robert H. Eckel,³ Philip R. Schauer,⁴ K. George M.M. Alberti,⁵ Paul Z. Zimmet,⁶ Stefano Del Prato,⁷ Linong Ji,⁸ Shaukat M. Sadikot,⁹ William H. Herman,¹⁰ Stephanie A. Amiel,¹ Lee M. Kaplan,² Gaspar Tarancher-Oldenburg,¹¹ and David E. Cummings,¹² on behalf of the Delegates of the 2nd Diabetes Surgery Summit*

METABOLIC SURGERY

Diabetes Care 2016;39:861–877 | DOI: 10.2337/dc16-0236

Organizations
International Diabetes
Diabetes, a joint statement of

the 2nd Diabetes Surgery Summit,
on behalf of the delegates of
and David E. Cummings,¹²
Gaspar Tarancher-Oldenburg,¹¹
Stephanie A. Amiel,¹ Lee M. Kaplan,²
William H. Herman,¹⁰



Metabolička hirurgija protiv šećerne bolesti (DMT2)

Metabolic surgery should be a *recommended* option to treat T2D in appropriate surgical candidates with class III obesity (BMI ≥ 40 kg/m²), regardless of the level of glycemic control or complexity of glucose-lowering regimens, as well as in patients with class II obesity (BMI 35.0–39.9 kg/m²) with inadequately controlled hyperglycemia despite lifestyle and optimal medical therapy.

Metabolic surgery should also be *considered* to be an option to treat T2D in patients with class I obesity (BMI 30.0–34.9 kg/m²) and inadequately controlled hyperglycemia despite optimal medical treatment by either oral or injectable medications (including insulin).

Diabetes Care 2016;39:881–891 | DOI: 10.2337/14c1e-0336

Organizations

International Diabetes

Diabetes Association of America

the 2nd Diabetes Surgery Summit,
on behalf of the delegates of
and David E. Cummings,¹³
Suzanne Touche-Oliver,¹⁴
Stephanie A. Virell,¹⁵ Lee M. Kaplan,¹⁶
Michael D. Jensen



Metabolička hirurgija protiv šećerne bolesti - Srbija

Institut za javno zdravlje Srbije (2014)

710.000 pt. DMT2 (12,4% odrasle populacije)

36% ljudi sa DMT2 nisu dijagnostifikovani



2500 godišnje umre od DMT2

Mortalitet 12,6 / 100.000 (najveći u EU)



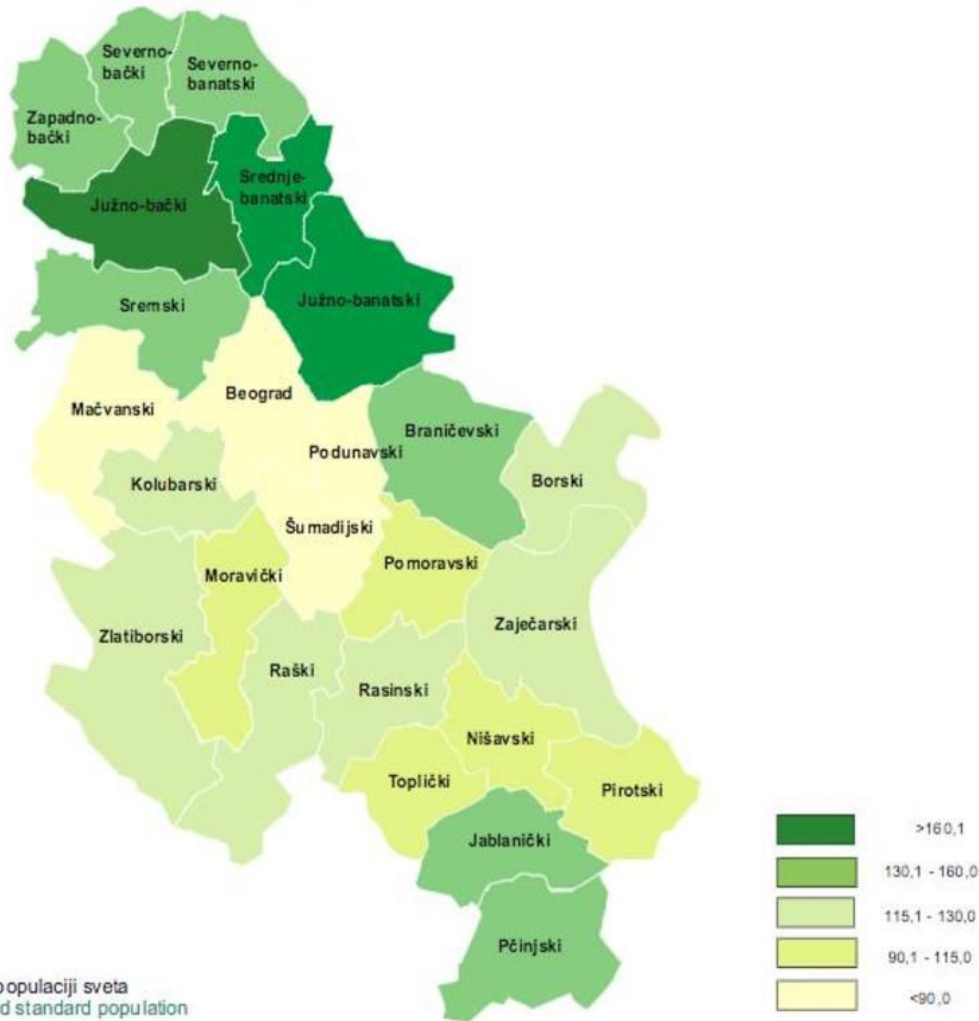
Metabolička hirurgija protiv šećerne bolesti - Srbija

Incidenca DMT2

Autonomna Pokrajina Vojvodina

(~ 2.000.000)

Slika 11. Standardizovane stope incidencije* od tipa 2 dijabetesa na 100.000 stanovnika, Srbija, 2014. godina
Figure 11. Age-standardized incidence rates* of type 2 diabetes per 100.000 population, Serbia, 2014



*prema populaciji sveta
*by World standard population

Posebna ugroženost stanovništva
u AP Vojvodini



Metabolička hirurgija protiv šećerne bolesti - Vojvodina



Dom zdravlja
Novi Sad

NOVI SAD
AREA WITHIN 50km
Population ≈ 811.650



10.1.7.3:8080/linika/klinika

Limani J. J. Zmaj Novo Naselje sistematski

	Broj knjižice:
Ambulanta laboratorijske dijagnostike "Liman"	
Ambulanta laboratorijske dijagnostike "Novo Naselje"	
Laboratorija "Jovan Jovanović Zmaj"	
Laboratorija "Liman"	
Laboratorija "Novo Naselje"	
Laboratorija - sistematski	
Laboratorija Begeč	
Laboratorija Budisava	
Laboratorija Bukovac	
Laboratorija Bulevar	
Laboratorija Bulevar vanstandardne usluge	
Laboratorija Elektrovojvodina	
Laboratorija Futog	
Laboratorija G.C. Futog	
Laboratorija G.C. Liman	
Laboratorija G.C. Novo Naselje	
Laboratorija J. J. Zmaj deca, trudnice	
Laboratorija J. J. Zmaj hitan prijem	
Laboratorija J. J. Zmaj odrasli	
Laboratorija J.J.Zmaj kućne posete	
Laboratorija J.J.Zmaj odrasli p.	
Laboratorija J.J.Zmaj sportski pregledi	
Laboratorija Kač	
Laboratorija Nisač	
Laboratorija Klisa	
Laboratorija Kovilj	
Laboratorija Liman deca, trudnice	
Laboratorija Liman hitan prijem	
Laboratorija Liman kazneno popravni zavod	



Metabolička hirurgija protiv šećerne bolesti - Vojvodina

Dom zdravlja, Novi Sad: 1.1.2016. – 30.6.2016.

Test: HgA1c

978 pt.

April: 193 pts.

140 pt. (72,5%)

Maj: 215 pts.

154 pt. (71,6%)

Juni: 219 pts.

140 pt. (64%)

Konzervativno lečenje šećerne bolesti u 2/3 pacijenata neadekvatno!

Pacijenti sa šećernom bolešću - zaslužuju hirurgiju u Vojvodini!



Zaključak

1. *Gojaznost, sa svojim fatalnim posledicama na život obolelog, bolest je savremenog sveta.*
2. *Ona je u fokusu i medicine i hirurgije od sredine XX veka.*
3. *I pored ogromnog fonda naučnih činjenica o etiopatogenezi gojaznosti, još nema efikasnog konzervativnog lečenja.*
4. *Hirurško lečenje gojaznosti i metaboličkog sindroma superiorno je u odnosu na svaki drugi tretman sa aspekta kvaliteta i dužine života.*
5. *Barijatrijska i metabolička hirurgija danas, pa i u našoj sredini, veoma je uspešna i praćena niskom stopom mortaliteta i morbiditeta.*
6. *Vojvodina je posebno ugrožena ovom bolešću i njenim komorbiditetima, ali za sada nema organizovanog pristupa ovoj problematici.*

