2009:24

Health Technology Assessment

HTA-rapport
Bukplastikkirurgi efter massiv viktnedgång

VÄSTRA GÖTALANDSREGIONEN
SAHLGRENSKA UNIVERSITETSSJUKHUSET

Tidigare publicerade HTA-rapporter

2009:23 MR Intraoperativ magnetkameraundersökning på Neurooperation
Leder användning av intraoperativ magnetkamera (MR) till ökad kirurgisk precision och därmed till en bättre överlevnad och ett mer fullständigt borttagande av intracerebrala tumörer och hypofystumörer?

2009:22 PMP -Pseuddomyxoma peritonei
Leder behandling med extensiv kirurgi kombinerad med hyperterm intra-abdominell cytostatika till en bättre överlevnad än gängse behandling (cytostatika iv, begränsande ”debulking kirurgi” och allmänt stödjande behandling) hos patienter med pseudomyxoma peritonei?

2009:21 SNS Sakralnervstimulering (SNS) vi fekal inkontinens
Är SNS en effektiv och kostnadseffektiv behandling vid fekal inkontinens jämfört med stoppande behandling med läkemedel, sjukgymnastik eller ingen behandling?

2009:20 TNF-hämmare vid tidig RA
Är behandling med TNF-hämmare+ metotrexat bättre avseende effekt på sjukdomsaktivitet, fysisk funktion, livskvalitet, skelettpåverkan och arbetsförmåga jämfört med behandling med metotrexat enbart, hos patienter med tidig RA som har en hög sjukdomsaktivitet och negativa prognostiska faktorer?

2009:19 ANP
Behandling av akut njursvikt med förmakspeptid ("atrial natriuretic peptide", ANP) för att minska behovet av dialys inom intensivvården.

2009:18 Klafförsett stentgraft
Är klafförsett stentgraft vid dysfungerande homograft mellan höger hjärtkammare och pulmonalartär likvärdigt eller bättre än öppen kirurgi avseende procedurrelaterade komplikationer, hemodynamiska variabler och hälsorelaterad livskvalitet?

2009:17 Kolonutredning
Vilken/vilka undersökningsmetoder är mest ändamålsenliga för undersökning av tjocktarmen hos patienter med misstänkt tjocktarmstumör?

2009:16 Probiotika
Kan profylaktisk probiotikatillförsel förhindra Clostridium Difficile-infektion (CDAD) eller ospecifik antibiotikaassocierad diarré (AAD) hos inneliggande vuxna patienter som behandlas med antibiotika?

2009:15 Cervixcancer
Är robotassisterad laparoskopisk kirurgi överlägset öppen kirurgi vid cervixcancer och är robotassisterad laparoskopisk kirurgi överlägset öppen kirurgi och laparoskopisk kirurgi vid corpuscancer avseende mortalitet/morbiditet?

2009:14 Akutkirurgi vid TIA
Är överlevnad med frihet från stroke hos patienter med symtomgivande karotisstenos bättre vid tidig (inom 48 tim) jämfört med senare trombendartärektomi av arteria carotis interna (CEA)?

2009:13 Öronakupunktur vid narkomani

2009:12 Postpolio
Effekt av intravenöst immunglobulin (IvIG) hos patienter med postpolioproblematik

2008: 11 Vätskebaserad cytologi

2008: 10 ADHD - (Attention-deficit/hyperactivity disorder) – Jan Svedlund, Hans Holmberg
Behandling av ADHD hos vuxna, med centralstimulerande medel

2008:09 Obesitaskirurgi

2007:08 Barrett´s esophagus

2007:07 Osseointegration

2007:06 PGD (Preimplantatorisk genetisk diagnostik)

2007:05 Screening avseende bukaortaaneurysm

2007:04 Vac (Vacuum Assisted Closure) vid fotsår hos diabetiker

2007:03 Överburenhet

2006:02 Ecmo
Kan behandling med mekaniska hjärtpumpar minska mortaliteten hos patienter med livshotande hjärtsvikt i samband med akut hjärtinfarkt

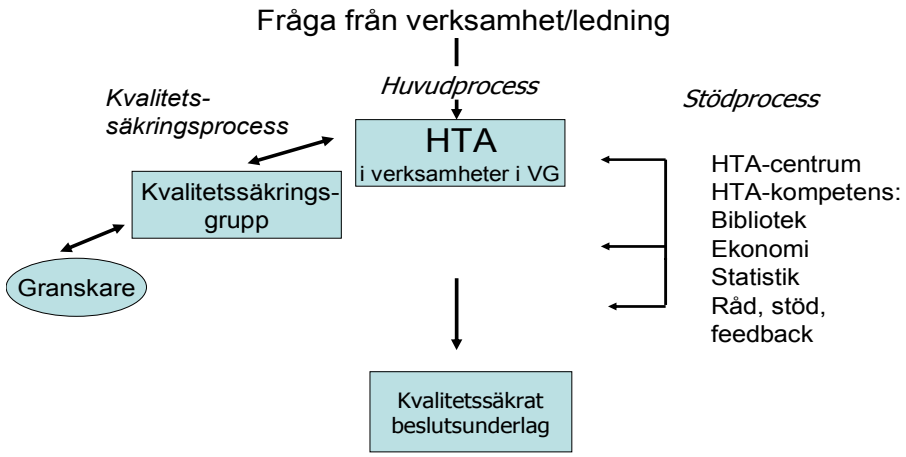
2006:01 Robotkirurgi vid lokaliserad prostatacancer

HTA-centrum

Vad är HTA?

HTA står för Health Technology Assessment – en systematisk granskning av den vetenskapliga dokumentationen för en metod eller teknologi inom hälso- och sjukvården. Avsikten med ett HTA-projekt är att värdera en viss teknik eller metod avseende.

- Effekten i form av patientnytta och risker
- Etiska aspekter
- Organisatoriska aspekter
- Kostnader



Christina Bergh, professor, HTA-chef
HTA-centrum

Utlåtande och sammanfattande bedömning från Kvalitetssäkringsgruppen

Bukplastikkirurgi efter massiv viktnedgång

HTA-kvalitetssäkringsgruppen har ett uppdrag att yttra sig över genomförda HTA i Västra Götalandsregionen. Yttrandet skall innefatta sammanfattning av frågeställning, samlat evidensläge, patientnytta, risker samt ekonomiska och etiska aspekter för den studerande teknologin.

Denna HTA har genomförts på begäran av Anna Elander,Verksamhetschef Plastikkirurgiska kliniken Sahlgrenska Universitetssjukhuset, Sahlgrenska sjukhuset (SU/Sahlgrenska)
En arbetsgrupp har utsetts bestående av Trude Staalesen, ST-läkare, SU/Sahlgrenska
Karl Bremer, kirurg, ST-läkare i Plastikkirurgi, SU/Sahlgrenska.
Från HTA -centrum har Annika Strandell, docent, Christina Bergh, Professor
Therese Svanberg, HTA-bibliotekarie, SU/S och Yommine Holmberg, bibliotekarie SU/S deltagit.

HTA-rapporten och åberopad och förtecknad litteratur har sedan granskats av Hans Hedelin, Professor adj, överläkare, FOU-centrum, Urologkliniken, Kärnsjukhuset, Skövde,
Peter Johansson , Med.dr, överläkare Medicinkliniken, NU-sjukvården, Uddevalla
Slutsatser har diskuterats vid möten mellan HTA-centrum och HTA-projektgruppen. Ett utlåtande har tagits fram, diskuterats och fastställts vid HTA-kvalitetssäkrings-gruppens möte 2009-12-09.

Projektet har pågått under perioden 2009-09-02 –2009-12-09
Sista uppdatering av artikelsökning oktober 2009

Frågeställning: Kan abdominoplastik eller pannikulektomi öka livskvaliteten, förbättra lungfunktionen och/eller minska ryggvärk hos kvinnor och män med överskottsvävnad efter massiv viktnedgång?

PICO: (Patient, Intervention, Comparison, Outcome)

P1: Kvinnor och män i alla åldrar med överskottsvävnad efter massiv viktnedgång
P2: Kvinnor med överskottsvävnad efter barnafödande
I: Abdominoplastik, panniculektomi, beltlipektomi
C: Ingen kirurgisk intervention
O: Livskvalitet, lungfunktion, ryggvärk, komplikationer

Resultatet av HTA-processen:

Metod och målgrupp:

Massiv viktnedgång eller graviditet kan resultera i ett vävnadsöverskott över buken, bestående av hud och subkutant fett. S.k. hängbuk kan orsaka både fysiologiska och psykologiska problem och därmed försämrad livskvalitet. Olika kirurgiska metoder används för att korrigera tillståndet; pannikulektomi, total/partiell abdominoplastik och beltlipektomi.

Evidensläge för studerad patientnytta:

En icke-randomiserad, kontrollerad, liten studie påvisade en positiv effekt på vissa livskvalitet-variabler. Kontrollerade studier avseende lungfunktion och ryggvärk saknades helt. Evidensstyrkan för slutsatsen att abdominoplastik förbättrar livskvaliteten är otillräcklig (GRADE ⊕OOO).

Risker
Enligt 12 fallserier med totalt ca 2700 patienter fann man att hematom, serom, defektläkta ärr, infektioner och nekroser var de vanligaste komplikationerna. Total komplikationsfrekvens i denna patientpopulation var generellt hög, 25-50%. Allvarliga komplikationer förekom mer sällan. Trombo-embolism beskrevs i 1-4%.

Etiska aspekter:
Det kan uppfattas som oetiskt att efter viktreducerande kirurgi inte reducera vävnadsöverskott. Operation av vävnadsöverskott kan stärka individens självkänsla genom att normalisera det som uppfattas som ett avvikande kroppsutseende. Samtidigt finns det en risk att människosynen påverkas negativt genom att erbjudande av operationen statuerar en ”normalitet”.
Är det oetiskt att utföra och öka antalet operationer för vävnadsöverskott när det vetenskapliga underlaget för patientnytta är otillräckligt?

Ekonomiska aspekter
2008 var medelkostnaden för en operation 39 000 SEK och årskostnaden i VGR 3,3 miljoner. Om den ökade efterfrågan på bariatrisk kirurgi kan mötas, och 30% av dessa patienter opereras för vävnadsöverskott, beräknas den årliga kostande öka till 14 miljoner SEK.

Sammanfattning och slutsats
Kirurgi (abdominoplastik och liknande metoder) är det enda kända sättet att åtgärda vävnadsöverskott efter massiv viktnedgång. Slutsatsen att patienterna erfar en ökad livskvalitet efter ingreppet, har ett otillräckligt vetenskapligt underlag. Övriga utfallsmått finns ej studerade i kontrollerade studier. Komplikationer av mindre allvarlig natur är mycket vanliga. Efterfrågan på denna typ av kirurgi bedöms öka pga att allt fler individer kommer att genomgå bariatrisk kirurgi.

För HTA-kvalitetssäkringsgruppen 2009-12-09

Christina Bergh
Ordförande
Litteraturlista: enligt redovisning i HTA:n

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Åsa Axelsson Docent	Lennart Jivegård, Universitetslektor	Maria Skogby Med.dr.
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Statement from the Regional HTA Centre of the Western Region in Sweden

Abdominal plastic surgery after massive weight reduction

The Regional Health Technology Assessment Centre (HTA-centrum) of the Western Region in Sweden (Region Västra Götaland, VGR) has the task to make statements on HTA reports carried out in VGR. The statement should summarise the question at issue, level of evidence, efficacy, risks, and economical and ethical aspects of the particular health technology that has been assessed in the report.

Anna Elander, Director of the Department of Plastic Surgery, Sahlgrenska University Hospital requested the present HTA and nominated a working group including Trude Staalesen, resident in the Department of Plastic Surgery, Sahlgrenska University Hospital, Karl Bremer, general surgeon, resident in the Department of Plastic Surgery, Sahlgrenska University Hospital and herself.
The participants from the HTA centre were Annika Strandell, Associate professor, Christina Bergh, Professor, Therese Svanberg, librarian SU/S, Yommine Holmberg, librarian SU/S
External reviewers: Hans Hedelin, Professor adj, senior consultant, FOU-centrum, Urologkliniken, Kärnsjukhuset, Skövde, and Peter Johansson, Med.dr, senior consultant, Medicinkliniken, NU-sjukvården, Uddevalla have critically appraised the report.

The project lasted during the time period September 2- December 9, 2009.
Last search updated in October 2009.

Question at issue:
Does abdominoplasty or panniculectomy improve quality of life, respiratory function and/or reduce back pain in women and men with abdominal tissue excess?

PICO (Patient, Intervention, Comparison, Outcome)

P1: Women and men at all ages with abdominal tissue excess after massive weight loss
P2: Women with abdominal tissue excess after childbirth
I : Full/partial abdominoplasty, panniculectomy, beltlipectomy
C: No surgical intervention
O: Quality of life, respiratory function, back pain, complications

Summary of the health technology assessment:

Method and patient group:
Massive weight loss or pregnancy often results in permanent abdominal tissue excess consisting of skin and subcutaneous fat. A hanging panniculus may cause various physiological and psychological problems leading to reduced quality of life. Available surgical procedures are panniculectomy, full/partial abdominoplasty and beltlipectomy.

Studied benefits and risks for patients of the new health technology:

One small non-randomized controlled study showed a positive effect on some of the variables measuring quality of life. There were no controlled studies on respiratory function or back pain. In 12 case series, including a total of almost 2700 patients, minor complications such as hematoma, seroma, dehischence, infection and necrosis, occurred commonly (25-50%). Major complications, mainly thromboembolism were described in 1-4%.

Level of evidence:
The scientific level of evidence of a positive effect of surgical treatment of abdominal tissue excess is very low (GRADE ⊕OOO) concerning quality of life. Other outcomes have not been studied in a controlled manner.

Ethical questions:
- One could consider it unethical to perform bariatric surgery without removing the resulting abdominal tissue excess.
-Abdominoplasty can strengthen an individual's human dignity by normalisation of his or her "abnormal" appearance. On the other hand, offering these procedures states the "normal appearance" which might influence the human value in a negative way.
-Is an increase in operations of tissue excess motivated in spite of insufficient scientific evidence of positive outcome?

Economical aspects:
Mean cost per patient was 39 000 SEK in 2008, resulting in 3,3 million SEK per year in VGR. If the increased demand of bariatric surgery could be met and 30% of those had abdominoplasties, the yearly cost would be estimated at 14 million SEK.

Concluding remarks
Surgery is the only available method to treat patients with abdominal tissue excess. The conclusion that the patients post-operatively describe an increase in quality of life, is based on very low scientific evidence. Minor complications are very common after this type of surgery. A raised demand of abdominoplasties is expected due to an increase in bariatric surgery.

On behalf of HTA-centrum Göteborg, Sweden, 2009-12-09

Christina Bergh, Professor, MD.
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Table of content

Which health technology or method will be assessed?

Does abdominoplasty or panniculectomi improve quality of life, respiratory function and/or reduce back pain in women and men with abdominal tissue excess?

1a Who posed the question?
Anna Elander, Director of the Department of Plastic Surgery, Sahlgrenska University Hospital

1b Additional parties who posed the question?
None
1c Other participants, from the HTA centre and external reviewers

Co workers:
Trude Staalesen, resident in the Department of Plastic Surgery, Sahlgrenska University Hospital
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1e Declaration of conflicts of interest
None

Disease/disorder of Interest and Present Treatment

2a Disease/disorder of interest and its degree of severity
☐ a) Risk of premature death
☐ b) Risk of permanent illness or damage, or reduced quality of life
☒ c) Risk of disability and impaired health-related quality of life

2b Definition of abdominal tissue excess and musculoaponeurotic laxity
Massive weight loss or pregnancy often results in permanent tissue excess localized on different body parts and common localizations for tissue excess are upper and lower extremities, breasts and abdomen.

Abdominal tissue excess consists of skin and subcutaneous fat. The extent of tissue excess vary and can in its mildest form be referred to as *cutis laxa*, which is skin folds without measurable ptosis most commonly located centrally on the abdomen. In more severe cases the tissue excess together with musculoaponeurotic laxity results in a hanging panniculus which degree of severity can be graded according to its relation to other body parts (Table 1 and Fig. 1,2)

Table 1. Grading of abdominal tissue excess/hanging panniculus modified from Igwe 2000
Grade 1: Tissue excess covering tuberculum pubicum
Grade 2: Tissue excess covering genitals and groins
Grade 3: Tissue excess covering upper parts of the thighs
Grade 4: Tissue excess covering upper half of the thighs
Grade 5: Tissue excess reaching the knees.

Figure I. An illustration of grade 1
(Patient consent has been obtained)

Figure 2. An illustration of grade2
(Patient consent has been obtained)

It is believed that the abdominal muscles by attaching to the lumbosacral fascia, support and stabilize the lumbar spine by passive tightening of the lumbosacral ligaments. In case of abdominal musculoaponeurotic laxity this supportive function is weakened, predisposing for lumbosacral pain (Toranto 1990). It has also been shown that musculofacial plication may improve pulmonary function. To explain this finding it is suggested that plication improves abdominal muscles contraction, increasing intra-abdominal pressure, pushing the diaphragm upwards to empty air from the lungs (Tercan 2002).

Abdominal tissue excess can cause various physiological and psychological problems leading to reduced quality of life, reducing the advantages of weight loss. The most frequently reported such problems are listed below

Physiological problems:
-skin irritation and infections under folds of redundant tissue
-exacerbation of back pain
-difficulties with personal hygiene and sexual function
-mobility problems
-pain due to mechanical friction

Psychological problems:
-negative body image perception
-feelings of unattractiveness
-depression
-low self esteem

Psychosocial problems:
-limiting choice of profession
-higher incidence of sick leave because of symptoms related to tissue excess
-limiting of type of clothing that can be worn

2b Prevalence and incidence of the disease/disorder
No population data exists describing the prevalence or incidence of abdominal tissue excess.

2c Present treatment of the disease/disorder in the outpatient setting/in-patient setting
Surgery is the only effective treatment of abdominal tissues excess and musculoaponeurotic laxity.

Available surgical procedures:

Full Abdominoplasty
The classic intervention of abdominoplasty starts with an incision made from hip to hip just above the pubic area. The umbilicus is isolated and preserved with its stalk. The skin and subcutaneous fat is detatched from the abdominal wall all the way up the to xhiphoid process on the sternum. The abdominal muscular fascia is tightened with sutures, the tissue excess is removed and the defect is closed. The umbilicus is brought out through a new hole in the skin and sutured in place. If needed, a vertical skin excision is performed in order to get better shape of the abdomen and less remaining tissue excess laterally.

Partial (mini) abdominoplasty
This surgical procedure differ from full abdominoplasty in the following manners; The skin and subcutaneous fat is detatched in a more limited fashion, the umbilicus is left in place and no tightening of muscular fascia is usually performed.

Panniculectomy
The strict definition of panniculectomi is removal of tissue excess below the umbilicus without detachment of skin and subcutaneus fat. However, panniculectomy is often used for abdominoplasty in the literature as well.

Beltlipectomy (circular abdominoplasty)
This is a combination of full abdominoplasty and a resection of excess tissue also on the back in a circumferential manner.

Liposuction
Liposuction is performed to reduce localised excess of subcutaneous fat. This procedure is of limited value in correcting a hanging panniculus since no excess skin is removed. This technique is therefore not included in the PICO of this report.

2d Number of patient per year who undergo current treatment regime
According to the recordings of the Swedish National Board of Health and Welfare (Nationella Medicinska Indikationer 2008), on average 475 operations for correction of tissue excess on the trunk was performed each year in public hospitals from 1998-2005 (Table 2). More than 90 % of the operations were coded with QBJ30 which means correction of hanging panniculus. The rest was coded with QBJ35. The distribution between men and women were on average 1:13

Table 2:Operations for correction of tissue excess on the trunk (QBJ30/QBJ35) performed in public hospitals from 1998-2005. The code QBJ30 means correction of hanging panniculus and QBJ35 means other correction of tissue excess or loose skin on the trunk.

year	1998	1999	2000	2001	2002	2003	2004	2005
QBJ30/QBJ35	**555**	**473**	**471**	**589**	**387**	**408**	**416**	**508**
men	38	42	41	27	31	36	21	43
women	517	431	430	562	356	372	395	465

Figure 3 and 4 show that operating frequencies vary with time and that regional difference exists.

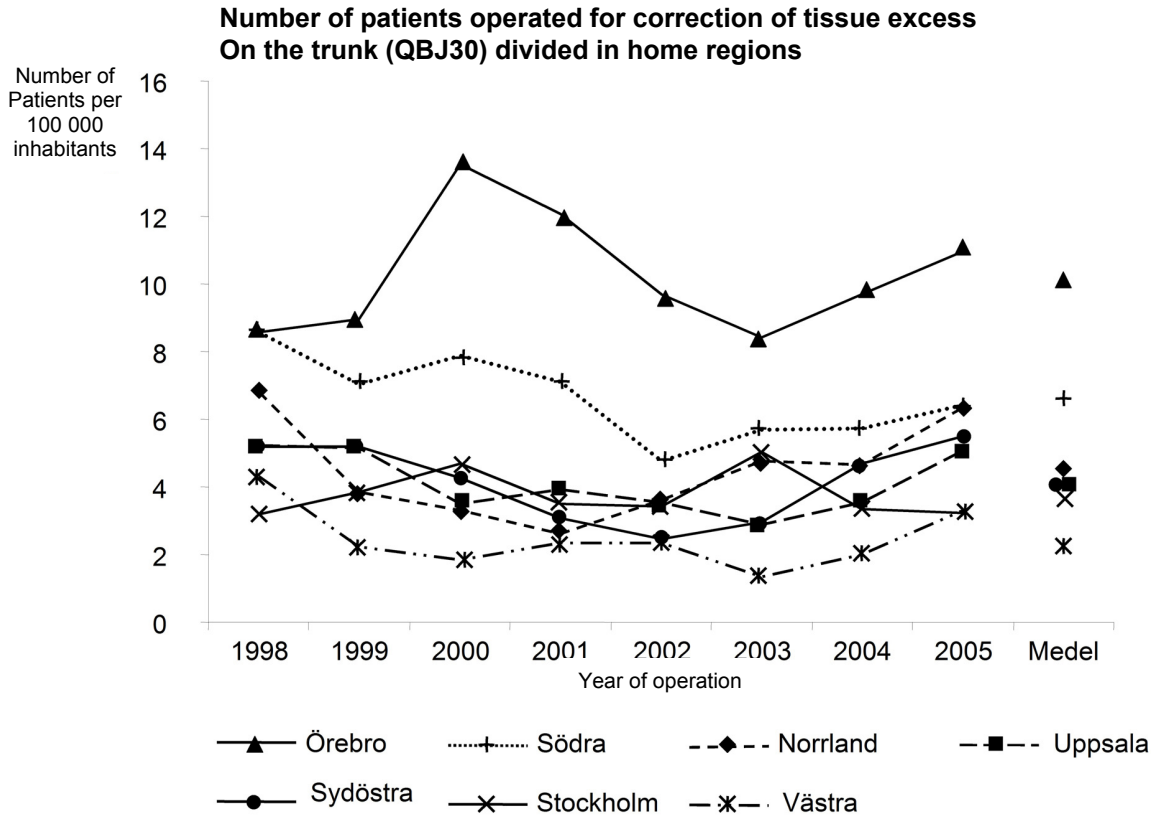


Figure 3: Number of patients per100 000 inhabitants in different regions undergoing correction of hanging panniculus (QBJ30) during the time period 1998-2005.

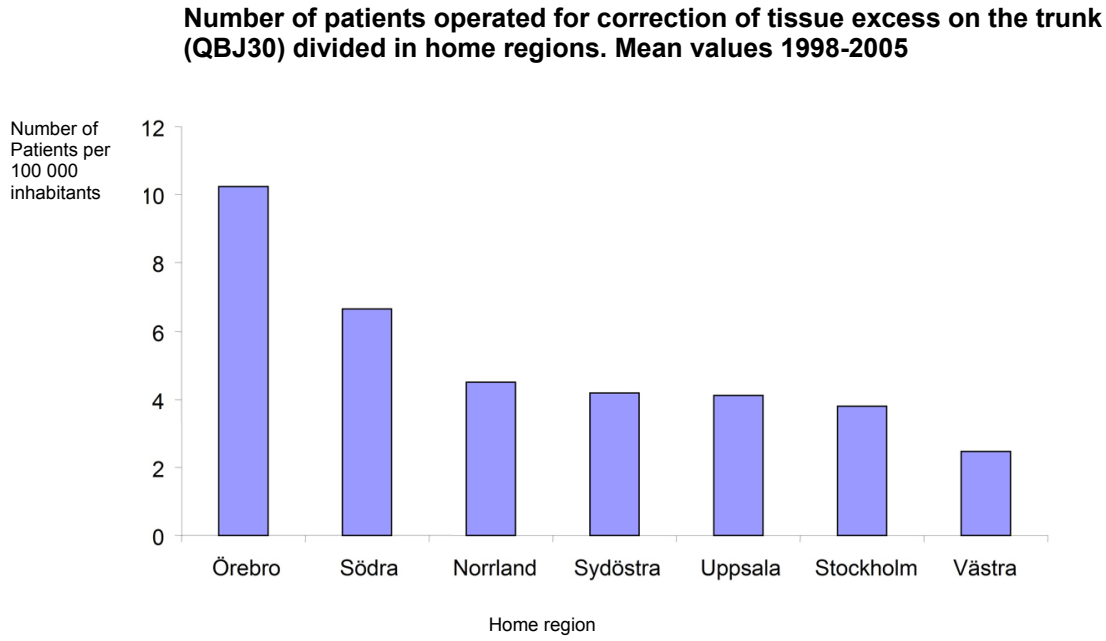


Figure 4: Number of patients undergoing correction of hanging panniculus (QBJ30) in different regions during the time period 1998-2005. The height of the bars illustrates the mean values for the reported time period.

During the time period 1998-2005, the number of abdominoplasties has not increased despite an increase in bariatric surgery. It is reason to believe that abdominoplasty is not prioritized compared with other surgical procedures.
Since the recording from the private clinics to the Swedish National Board of Health is fragmentary or non-existing it is not known how many abdominoplasties that are performed in private health care with or without public financing. However, it is estimated that the number of abdominoplasties performed in private health care is at least the same or even higher than in public health care.

2e The normal pathway for a patient through the health care system
In Sweden, abdominal tissue excess is diagnosed at primary health care units, at general surgery or gynecology outpatient's clinics or at outpatient clinics specialized in obesity.
An increasing number of patients diagnosed with tissue excess are referred to specialized plastic surgery units in regional public clinics or to private plastic surgery clinics. Patients accepted for surgery are operated either at general surgery units or in county hospitals with this competence, in plastic surgery units in regional clinics or in private plastic surgery clinics. Follow-up is conducted at general surgery/plastic surgery outpatient clinics, often in collaboration with primary health care units.

2f Actual wait time in days for medical assessment/treatment
Since 2009 at the Sahlgrenska University Hospital, patients wait less than 3 months after referral from general practitioner/outpatient clinics to medical assessment.
Patients wait between 6-9 months from decision of surgery until surgery is performed.

Present Health Technology

3a Name/description of the health technology at issue
Surgical treatment of abdominal tissue excess and musculoaponeurotic laxity including the following surgical procedures:
-full abdominoplasty
-partial/mini abdominoplasty
-panniculectomy
-beltlipectomy

3b The work group's understanding of the potential value of the health technology
During the past three to four years, an increasing number of patients diagnosed with abdominal tissue excess are referred to specialized plastic surgery units in regional clinics. These patients suffer from physical, psychological and psychosocial problems as earlier mentioned.

This increase of patient flow can partly be explained by a growing number of patients undergoing bariatric surgery and partly by increased body fixation and lower tolerance to body contour deformities. During 2008, 600 patients underwent bariatric surgery in our region. It is estimated that about 30% of these patients are in need of surgical correction of tissue excess (Nationella Medicinska Indikationer 2008). An increase in operating capacity is mandatory to be able to treat the increasing number of patients.

Surgery is the only effective treatment to remove abdominal tissue excess and to correct musculoaponeurotic laxity. The goal of this surgery is symptom relief and normalization of body contour deformities. Removal of abdominal tissue excess was described for the first time by Kelly in 1910. He reported several benefits of abdominoplasty, like improved wellbeing, reduction of back pain, better body posture, increased level of physical activity and better personal hygiene. Since the initial work of Kelly, abdominoplasty and panniculectomi has become well established surgical procedures. The current clinical opinion about the outcomes of surgical removal of abdominal tissue excess is that most patients are satisfied with the result. It is therefore easy to conclude that surgical removal of abdominal tissue excess improves psychological and physical parameters.

This HTA report focuses on the question if scientific evidence exists to support the current clinical opinion that the surgical outcome of abdominoplasty and panniculectomy is positive.

3c The central question for the current HTA project in one sentence
Does abdominoplasty or panniculectomi improve quality of life, respiratory function and/or reduce back pain in women and men with abdominal tissue excess?

3d PICO
P1: Women and men at all ages with abdominal tissue excess after massive weight loss
P2: Women with abdominal tissue excess after childbirth
I: Full/partial abdominoplasty, panniculectomy, beltlipectomy
C: No surgical intervention
O: Quality of life, respiratory function, back pain, complications

3e Key words: weight loss, abdominoplasty, surgical outcome

4.Search strategy, study selection and references – appendix 3
(Search strategy, Eligibility criteria, Selection process – flow diagram, References)

During September - October, 2009, the library performed searches in PubMed, the Cochrane Library, CINAHL, AMED, PsycInfo and a number of HTA-databases. (See appendix 3 for details). Reference lists of relevant articles were also scanned for additional references. A total of 630 articles were identified, of which 556 abstracts were excluded by the library. Another 61 articles were excluded by the library after having been read in full text. 13 articles were sent to the whole project group; one controlled study and 12 case series. All of these articles are included in the report and the controlled study has been critically appraised. The appraisal of articles is based on checklists from SBU (2008), which were developed by Olle Nyrén, professor, Karolinska Institutet, Stockholm.
Search strategies, eligibility criteria and a graphic presentation of the selection process are accounted for in appendix 3, together with reference lists. All searches, selection of search terms and exclusion of abstracts and articles were made by two librarians (TS and YH), in consultation with the project group.

5a Describe briefly the present knowledge of the health technology
The literature search identified 13 studies that fulfilled the PICO criteria including one controlled study, and 12 case series. No study was randomized. One systematic review (Pattersson 2003), with a somewhat different PICO, assessing the effectiveness of abdominoplasty in improving quality of life or social or psychological health compared with other treatments found insufficient evidence.

Outcome **Quality of life**
In a controlled study, 34 patients undergoing abdominoplasty were interviewed before and after surgery using 5 different questionnaires assessing psychosocial parameters. The same clinical parameters were also investigated in a control group of 26 gastric banding patients who lost weight but did not undergo abdominoplasty. Comparisons were made before and after surgery between and in both groups. Patients in this study reported postoperatively improvement in body image and their postoperative body image was better compared to the control group. Details are given in Appendix 1a. Study quality was graded as low.

Outcome **Complications**
One prospective case series was identified. In this study a prospective clinical database was established to analyze postbariatric patient outcomes. 449 patients undergoing 511 separate operations of postbariatric body contouring were enrolled in the study. Single procedure cases accounted for 194 cases (group 1) while the remaining 317 involved multiple procedures (group 2). The majority (270/317) of the multiple procedures in group 2 included abdominoplasty/panniculectomy and the majority (150/194) of the single procedure cases in group 1 were abdominoplasty/panniculectomy. The analysis of both the entire cohort and two subgroups was performed. Group 2 reported significantly more complications (52%) in comparison to group 1 (25%). In both groups the most frequently reported complication was dehiscence followed by seroma and cellulitis. For all cases (n=511) the presence of a complication was directly related to maximum BMI and the difference in BMI but not to current BMI.
11 retrospective case series were identified, outlining the frequency of complications after surgical removal of abdominal tissue excess. They showed the same pattern of minor

complications as described in the prospective series. Venous thromboembolism, characterized as major complications, was reported in a frequency of 2-8% in three of the series. The studies are summarized in Appendix 1b.
All case series are classified as having low quality.

Outcomes **Respiratory function** and **Back pain**
No studies fulfilling the PICO criteria were identified.
No studies on the subpopulation of women with abdominal tissue excess after childbirth were found.

The scientific level of evidence of a positive effect of surgical treatment of abdominal tissue excess is insufficient concerning all studied outcomes. Level of evidence ⊕OOO according to the GRADE-system.

5b Outcome tables of included articles
Appendix 1a, Quality of life
Appendix 1b, Complications

5c Table of excluded articles by reason
No articles were excluded after the library selection.

5d Ongoing research
Two on-going studies were identified at the Department of Plastic Surgery at Sahlgrenska University Hospital:
1. A randomised prospective study, evaluating the effect of abdominoplasty on self reported psychosocial parameters, objective measurements of back pain and respiratory function in patients undergoing abdominoplasty with musculofacial plication compared to patients undergoing abdominplasty without musculofacial plication.
2. A randomised prospective study started in 2009 in cooperation with the Obesity Unit at Sahlgrenska University Hospital including postbariatric patients compared to a control group consisting of patients who are accepted for abdominoplasty whose operation is delayed by 2 years. The effect of abdominoplasty is evaluated by self reported psychosocial parameters.

A questionnaire (Sahlgrenska Excessive Skin Questionnaire) for investigation of whether patients experience problems with tissue excess has been constructed at the Obesity Unit in cooperation with the Plastic Surgery Unit at the Sahlgrenska University Hospital. This questionnaire has been validity and reliability tested and is recently translated into English and will be published shortly.

One study, identified at the Department of Surgery at the Sahlgrenska University Hospital, evaluating self reported occurrence and localisation of tissue excess in postbariatric patients has recently been published (Biörserud 2009). In this study, 84% of the postbariatric patients interwieved, reported problems with tissue excess.
A search in www.clinicaltrials.gov revealed no ongoing clinical trials fulfilling the PICO.

6 Which medical societies or health authorities recommend the new health technology?
-Swedish Association of Plastic Surgery
-Medical Sector Council for Surgery in Västra Götaland (that has recently participated in prioritizing indications of operative procedures at the Sahlgrenska University hospital)

Ethical aspects

7a Ethical consequences

Is abdominoplasty in patients with abdominal tissue excess ethical justified?

A comparative ethical analysis between performing abdominoplasty versus refraining from this surgical procedure was performed by Professor Jan Wahlström (Appendix 4). According to this analysis, abdominoplasty strengthens an individual's human dignity by normalisation of his or her "abnormal" appearance, resulting in reduced risk of negative special treatment because of his or her appearance. On the other hand, there is also a risk that human dignity can be influenced negatively. By offering this operation, a general opinion can be created, stamping individuals having abdominal tissue excess as abnormal with a lower human dignity compared to people in general.

Is an increase in the number of operations of tissue excess motivated in spite of insufficient scientific evidence of positive surgical outcome?

Studies of surgical methods very seldom reach the highest level of evidence and we consider the existing scientific evidence together with current clinical opinion as sufficient to motivate an increase in operating activity.

Is a decrease in operating activity in VGR ethically motivated?

The number of patients undergoing bariatric surgery, especially gastric bypass is increasing. We find it highly unethical to perform bariatric surgery without removing the resulting abdominal tissue excess. We believe that removing a hanging panniculus is a vital part of the surgical treatment of obese patients, since these patients, despite massive weight loss still feel and look obese, because of the remaining tissue excess.

7b Will other patient groups be disadvantaged due to an increase of the reviewed health technology?

Other plastic surgery procedures and maybe even other surgical procedures will presumably be disadvantaged due to an increase in the number of abdominoplasties. However, this effect can be minimized by making the patient flow through the health care system more efficient and by concentrating the resources to highly specialised units.

Organisation

8a When can this health technology be put into practise?
The reviewed technology is already on-going

8b Is this technology used in other hospitals in the Western region of Sweden?
At Skövde Hospital/KSS abdominoplasties are performed by a plastic surgeon who has many years experience of plastic surgery. Except from this, most of the operations are performed within public health care at the Plastic Surgery Unit at the Sahlgrenska University Hospital or at private units.

8c Will there be any consequences of an increase of the health technology for personnel?
A sufficient number of staff to meet an increase in operating capacity will be necessary which makes both education of existing staff and recruitment of new personnel crucial.

8d Will there be any consequences for other clinics or supporting functions at the hospital or in the whole Western region of Sweden?
If an increase in operating capacity needed to meet an accelerated need of abdominoplasties exceeds the capacity of both KSS and the Plastic surgery Unit at the Sahlgrenska hospital, the amount of abdominoplasties performed in other clinics in the Western region of Sweden also has to increase. Today surgical competence is missing in the western region fulfilling this requirement and the competence level among surgeons throughout the region has to be raised.

Economy

9a Present cost of currently used technologies
Cost of abdominoplasties performed at Sahlgrenska University Hospital (n=65) and at Skövde hospital (n=25) in 2008 :
Cost per patient (mean)*: 38907 SEK
Total cost, based on mean cost above (n=85): 3 307 095 SEK

*Calculation of mean cost is based on costs for patients operated at Sahlgrenska University Hospital. Patients undergoing combined procedures or reoperations due to complications are excluded.

9b Expected costs of the health technology
Not applicable

9c Total change of costs
According to a preliminary report from a working team, developing new guidelines of bariatric surgery in Västra Götaland, about 1212 bariatric operations will be needed in 2010. If 30% of these patients undergoes abdominoplasty, as estimated above, this production will generate a total cost of 14 146 585 SEK (based on mean cost per patient in 2008) which represents an increase in total cost of 328%.

An increase in competence level and recruitment of staff to meet the above increased need of abdominoplasties will generate additional costs.

9d Can the technology be adopted and used within the present budget?
Not applicable

9e Are there any available analyses of health economy? Cost advantages or disadvantages?
No

Unanswered Questions

10a Important gaps in scientific knowledge?
There is a lack of controlled studies, assessing the effect of abdominoplasty on quality of life, respiratory function and back pain. To improve the level of evidence, prospective randomised trials are needed.

10b Is there any interest in your own clinic/research group/organisation to start studies/trials within the research field at issue?
In our own clinic we already have two ongoing prospective studies, shortly reviewed in question 5d in this report.

Summary of the Health Technology Assessment

Method and patient group:
Massive weight loss or pregnancy often results in permanent abdominal tissue excess consisting of skin and subcutaneous fat. In more severe cases the tissue excess together with musculoaponeurotic laxity results in a hanging panniculus, causing various physiological and psychological problems leading to reduced quality of life. Surgery is the only effective treatment to remove abdominal tissue excess and to correct musculoaponeurotic laxity. Available surgical procedures are panniculectomy, full/partial abdominoplasty and beltlipectomy.

Question at issue:
Does abdominoplasty or panniculectomi improve quality of life, respiratory function and/or reduce back pain in women and men with abdominal tissue excess?

PICO:
P1: Women and men at all ages with abdominal tissue excess after massive weight loss
P2: Women with abdominal tissue excess after childbirth
I: Full/partial abdominoplasty, panniculectomy, beltlipectomy
C: No surgical intervention
O: Quality of life, respiratory function, back pain, complications

Studied benefits and risks for patients of the new health technology:
There is only one small non-randomized controlled study on quality of life, showing a positive effect on some of the variables measured. Complications are assessed from 12 case series, identifying the most common as hematoma, seroma, dehischence infection and necrosis. Major complications, thromboembolism and sepsis occurred more rarely.
The scientific level of evidence of a positive effect of surgical treatment of abdominal tissue excess is insufficient (GRADE ⊕OOO) concerning all studied outcomes.

Ethical questions:
-Abdominoplasty can strengthen an individual's human dignity by normalisation of his or her "abnormal" appearance. On the other hand, there is also a risk that human dignity can be influenced negatively by offering these procedures to those with "abnormal" appearance.
- One could consider it unethical to perform bariatric surgery without removing the resulting abdominal tissue excess.
-Is an increase in operations of tissue excess motivated in spite of insufficient scientific evidence of positive outcome?

Economical aspects:
Mean cost per patient was 39 000 SEK in 2008, resulting in 3,3 million SEK per year in VGR. If the increased demand of bariatric surgery could be met and 30% of those hade abdominoplasties, the yearly cost would be estimated at 14 million SEK.

Appendix 1a
Outcome tables of included articles (Ouality of life)

Outcome variable: Quality of life

Author, year, country, reference number	Study design, number of patients, withdrawals/drop-outs	Result Intervention and control group	Comments	Quality of study
Stuerz H, 2008, Austria	-Prospective study - evaluation of psychosocial consequences of abdominoplasty using 5 different psychological questionnaires, administered to the study participants 1 day before, 3 and 12 month after intervention -Intervention group n=34 -Control group n=26 -Drop outs n=3 (because of changing of address no further data could be obtained)	-Significant (p=0.001) postsurgical improvement in the subscale attractiveness/self-esteem for body image within the intervention group. (Patient score in the control group first decreased and then rise at the second follow up) -No significant changes in life satisfaction, anxiety or depression after intervention.	-Small sample size -More than one surgical procedure (26% of the participants had undergone a second plastic surgery operation at the time of follow up at 12 months) - A heterogeneous intervention group (patients requesting abdominoplasty) are compared with a homogen control group (gastric banding patients)	low

Appendix 1b
Outcome tables of included articles (Complications)

Outcome variable: Complications

Author, year, country, reference number	Study design, number of patients, withdrawals/drop-outs	Result Intervention and control group	Comments	Quality of study
Acarturk T, 2004,USA	Retrospective case series of 123 patients undergoing panniculectomi concurrent with bariatric surgery or subsequent panniculectomy (single /combined procedures).	Simultaneous bariatric surgery and panniculectomy: Wound infections 48%, dehiscence 33%, hematoma 10%, skin necrosis 10%, and respiratory problems 24% Subsequent panniculectomy: Wound infections 16%, dehiscence 13%, hematoma 2%, skin necrosis 6%, respiratory problems 0%		low
Araco A, 2009, United Kingdom	Retrospective case series of 137 abdominoplasties. Patients with ongoing clinical infections, systemic diseases that could impair wound repair, those who had undergone apronectomy and those who had recently been treated with antibiotics were excluded. No information about the number of patients excluded	Seromas occurred in 5,1%, hematoma in 5,1%, wound infections in 20,4% and delayed wound healing in 7,3%		low
Arthurs Z, 2006, USA	Retrospective case series of 126 postbariatric patients undergoing panniculectomies. Patients who underwent panniculectomy but did not undergo a bariatric procedure were excluded.	Seroma 17%, hematoma 13%, local infection 17%, wound breakdown 11%,	Patients with a prepanniculectomi BMI greater than 25 had nearly three times the risk of postoperative complications.	low
Coon D, 2000, USA	Prospective case series of 449 patients undergoing postbariatric surgery single/combined procedures. (Abdominoplasty performed as single procedure: n=150) Inclusion crtiteria: Weight loss>150 pounds	<u>All patients:</u> Dehiscence 22,4%, seroma 13,1%, cellulitis 7,7%, necrosis 6,8%, hematoma 4,7% <u>Single procedure</u> (n=170): dehiscence 9,5%, seroma 4,1%, cellulitis 5,3%, necrosis 2,4%, hematoma 4,7%	For all cases, Delta BMI and Max BMI were significantly related to the presence of a complication while current BMI was not	low

Appendix 1b
Outcome tables of included articles (Complications)

Outcome variable: Complications

Author, year, country, reference number	Study design, number of patients, withdrawals/drop-outs	Result Intervention and control group	Comments	Quality of study
Kerviler, 2009, Switzerland	Retrospective case series of 104 patients undergoing abdominoplasty or beltlipectomy following massive weight loss. 7 patients were excluded because they didn't meet the inclusion criteria or due to incomplete records. Additional one patient was excluded due to lethal postoperative complications	Overall observed complication rate was 26,9%. Wound dehiscences occurred in 20% of the patients and seroma in 7,7% of the patients. One patient died 3 weeks postoperativly due to pulmonary embolism.	The total complication rate was reduced compared to the results in other studies. According to the authors, this was achieved by exclusion of patients with EBML (excess body mass index loss) <30%	low
Fraccalvieri M, 2007, italy	Retrospective case series of 117 patients undergoing abdominoplasty after significant weight loss. Inclusion criteria: Max BMI >40 or max BMI between 35 and 40, preoperative BMI <30	Total complication rate: 50,43%. Most common complications: Seroma, anaemia, wound dehiscence, hematoma, hemorrage, infections, fistulas. Less frequent complications: DVT , pulmonary thromboembolism , abscess		low
Greco J, 2008, USA	Retrospective case series of 222 patients undergoing either abdominoplasty (n=133) or panniculectomy (n=133)	Postbariatric patients: infection 20%, hematoma 10%, multiple complications 15%, healing disturbance 19% Patients without prior bariatric surgery: healing disturbance 5%, infection 7%, multiple complications 6%, hematoma 3%, seroma 9%		low

Appendix 1b
Outcome tables of included articles (Complications)

Outcome variable: Complications

Author, year, country, reference number	Study design, number of patients, withdrawals/drop-outs	Result Intervention and control group	Comments	Quality of study
Hatef D, 2008, USA	Retrospective case series of 347 patients undergoing body countering surgery (single procedures/combined procedures). Twelve patients were excluded because of incomplete data or previous history of DVT	Combined procedures: venous tromboembolism 5,48% Abdominoplasty alone: venous tromboembolism 4,65% BMI>30, circumferential abdominoplasty and hormone therapy increased the risk of DVT in the study		low
Igwe 2000, USA	Retrospective case series of 577 patients undergoing panniculectomy. Combined procedures (panniculectomy together with GBP) in 74% of the cases. No information about drop outs.	Concurrent panniculectomy: Wound separations 9,8%, seroma 4,2 %, wound infections 2,3%, bleeding 1,9%, cellulitis 1,2% Subsequent panniculectomy: Wound separation 7,2%, seroma 4,3%, wound infections 2%, bleeding 1,3% cellulitis 1,3%	The complication rate of infections and wound separation was slightly higher in patients undergoing panniculectomy together with GBP compared to patients undergoing panniculectomy after bariatric surgery.	low
Leahy P, 2008,USA	Retrospective case series of 100 consecutive patients undergoing panniculectomi (single/combined procedures) after massive weight loss. Inclusion criteria: weight loss of at least 50lb, BMI <40 at time of surgery No information about dropouts.	Need for blood transfusion 39%, necrosis 18%, contour irregularity requiring revision 15%, wound infection 6%, reexploration for bleeding 1% one death 4 weeks postoperative. Statistically significant association: Increased transfusion rate with hogher volumes of tissue resection	No specification of complication rates after single procedures (panniculectomy)	low

Appendix 1b
Outcome tables of included articles (Complications)

Outcome variable: Complications

Author, year, country, reference number	Study design, number of patients, withdrawals/drop-outs	Result Intervention and control group	Comments	Quality of study
Rohrich, 2006, USA	Retrospective case series of 151 patients undergoing central body lift procedure. Inclusion criteria: ASA I-II (low pre-operative risk score), minimal medical co morbidity, no significant cardiac or pulmonary disease and a preoperative medical clearance evaluation.	Overall complication rate: 28/55 Seroma 14,6%, hypertrophic scars 3,3%, dehiscence 1,3%, skin necrosis <2cm 1,3 % infections n=1, DVT: n=2, pulmonary embolus n=1		low
Shermak M, 200, USA	Retrospective case series of 222 patients undergoing body-countering surgery after massive weight loss. Single procedures/combined procedures. Abdominoplasties n=205 No information about dropouts.	Infections 4%, venous thromboembolism 2%, bleeding requiring reoperation 2%, hematoma 1%, seroma 14%	No specification of complication rates after single procedures	low

Appendix 3, Search strategy, study selection and references

Central question:

Does abdominoplasty or panniculectomy improve quality of life, respiratory function and/or reduce back pain in women and men with abdominal tissue excess?

PICO

P1: Women and men at all ages with abdominal tissue excess after massive weight loss
P2: Women with abdominal tissue excess after childbirth
I: Full/partial abdominoplasty, panniculectomy, beltlipectomy
C: No surgical intervention
O: Quality of life, respiratory function, back pain, complications

4a) Search strategy:

PUBMED 2009-09-04, search updated 2009-09-30

(body lift OR body lifts OR body-lift OR body-lifts) OR (body contouring OR body-contouring) OR (plastic bariatric surgery OR plastic bariatric surgeries) OR (abdominal skin reduction OR abdominal skin reductions) OR (belt-lipectomy OR "belt lipectomy" OR belt-lipectomies OR "belt lipectomies") OR (abdominoplasty OR abdominoplasties) OR (panniculectomy OR panniculectomies) OR (diastasis recti OR rectus diastasis)

AND

(post-bariatric OR postbariatric) OR (post-obese OR postobese) OR (weight loss) OR (weight-reduction) OR (pregnancy OR pregnancies OR pregnant) OR (post-pregnancy OR post-pregnancies OR post-pregnant) OR (postpregnancy OR postpregnancies OR postpregnant)

494 results

COCHRANE 2009-09-04, search updated 2009-10-07

body lift OR body lifts OR body-lift OR body-lifts OR body contouring OR body-contouring OR plastic bariatric surgery OR plastic bariatric surgeries OR abdominal skin reduction OR abdominal skin reductions OR belt-lipectomy OR "belt lipectomy" OR belt-lipectomies OR "belt lipectomies" OR abdominoplasty OR abdominoplasties OR panniculectomy OR panniculectomies OR diastasis recti OR rectus diastasis
in Title, abstract, keywords

6 Cochrane reviews
1 technology assessment

41 Cochrane clinical trials
with the additional search terms:

(post-bariatric OR postbariatric) OR (post-obese OR postobese) OR (weight loss) OR (weight-reduction OR weight reduction) OR (pregnancy OR pregnancies OR pregnant) OR (post-pregnancy OR post-pregnancies OR post-pregnant) OR (postpregnancy OR postpregnancies OR postpregnant)

CRD 2009-09-04, search updated 2009-10-07

body lift OR body lifts OR body-lift OR body-lifts OR body contouring OR body-contouring OR plastic bariatric surgery OR plastic bariatric surgeries OR abdominal skin reduction OR abdominal skin reductions OR belt-lipectomy OR "belt lipectomy" OR belt-lipectomies OR "belt lipectomies" OR abdominoplasty OR abdominoplasties OR panniculectomy OR panniculectomies OR diastasis recti OR rectus diastasis

20 results
DARE: **10**
NHS EED: **6**
HTA: **4**

CINAHL & AMED 2009-09-04, search updated 2009-10-07

(body lift OR body lifts OR body-lift OR body-lifts) OR (body contouring OR body-contouring) OR (plastic bariatric surgery OR plastic bariatric surgeries) OR (abdominal skin reduction OR abdominal skin reductions) OR (belt-lipectomy OR "belt lipectomy" OR belt-lipectomies OR "belt lipectomies") OR (abdominoplasty OR abdominoplasties) OR (panniculectomy OR panniculectomies) OR (diastasis recti OR rectus diastasis)

AND

(post-bariatric OR postbariatric) OR (post-obese OR postobese) OR (weight loss) OR (weight-reduction) OR (weight reduction) OR (pregnancy OR pregnancies OR pregnant) OR (post-pregnancy OR post-pregnancies OR post-pregnant) OR (postpregnancy OR postpregnancies OR postpregnant)

48 results

PsycInfo 2009-09-04, search updated 2009-10-07

(body lift OR body lifts OR body-lift OR body-lifts) OR (body contouring OR body-contouring) OR (plastic bariatric surgery OR plastic bariatric surgeries) OR (abdominal skin reduction OR abdominal skin reductions) OR (belt-lipectomy OR "belt lipectomy" OR belt-lipectomies OR "belt lipectomies") OR (abdominoplasty OR abdominoplasties) OR (panniculectomy OR panniculectomies) OR (diastasis recti OR rectus diastasis)

AND

(post-bariatric OR postbariatric) OR (post-obese OR postobese) OR (weight loss) OR (weight-reduction) OR (weight reduction) OR (pregnancy OR pregnancies OR pregnant) OR (post-pregnancy OR post-pregnancies OR post-pregnant) OR (postpregnancy OR postpregnancies OR postpregnant)

11 results

SBU, Kunnskapssenteret, Sundhedsstyrelsen 2009-09-04, search updated 2009-10-07

0 results

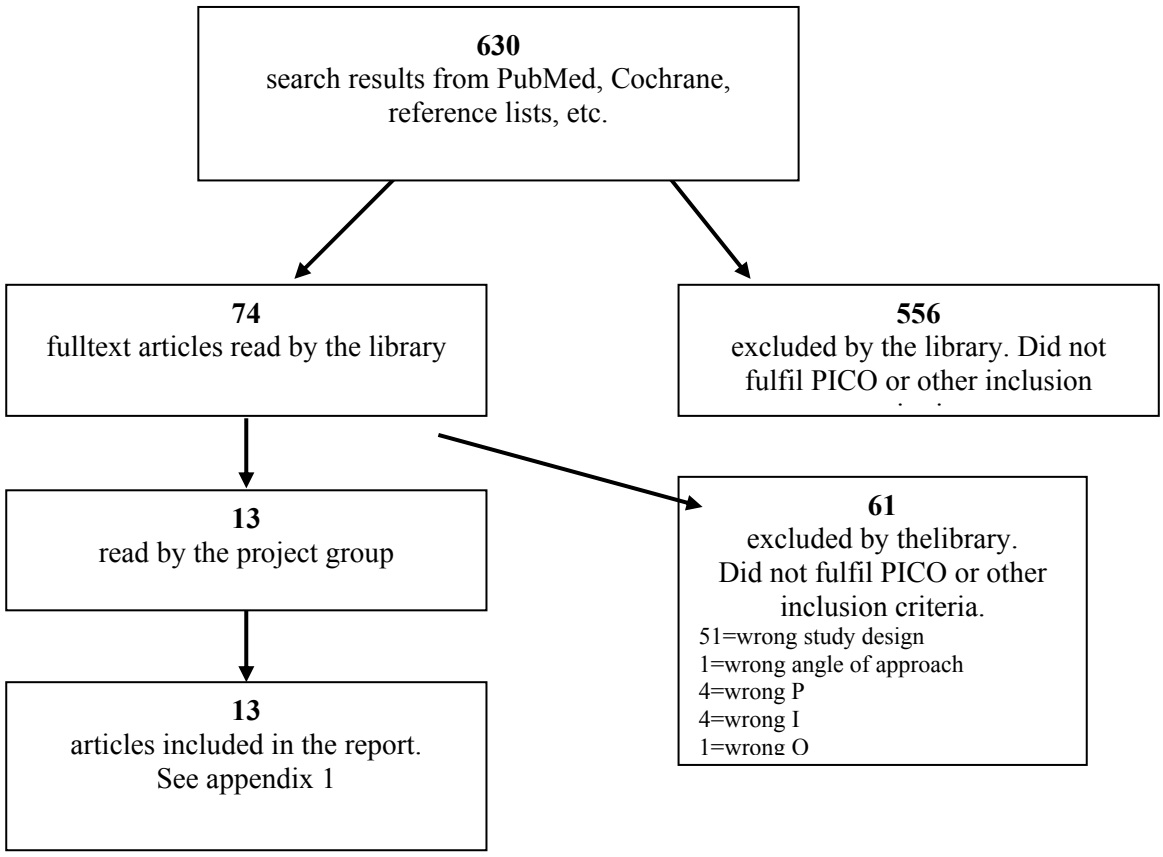
b) Eligibility criteria

Language:
English, Swedish, Norwegian, Danish

Publication date:
No limits

Study design:
Inclusion:
Studies with some kind of control group if ≥ 30 patients
Case series etc. if ≥ 100 patients. These articles are not critically appraised using check lists, only commented on.
Exclusion:
No review articles or case studies.

c) Selection process – flow diagram:



d) References:

Included articles:

Acarturk TO, Wachtman G, Heil B, Landecker A, Courcoulas AP, Manders EK.
Panniculectomy as an adjuvant to bariatric surgery.
Ann Plast Surg. 2004 Oct;53(4):360-6; discussion 367

Araco A, Sorge R, Overton J, Araco F, Gravante G.
Postbariatric patients undergoing body-contouring abdominoplasty: two techniques to raise the flap and their influence on postoperative complications.
Ann Plast Surg. 2009 Jun;62(6):613-7.

Arthurs ZM, Cuadrado D, Sohn V, Wolcott K, Lesperance K, Carter P, Sebesta J.
Post-bariatric panniculectomy: pre-panniculectomy body mass index impacts the complication profile.
Am J Surg. 2007 May;193(5):567-70; discussion 570.

Coon D, Gusenoff JA, Kannan N, El Khoudary SR, Naghshineh N, Rubin JP. Body mass and surgical complications in the postbariatric reconstructive patient: analysis of 511 cases.
Ann Surg. 2009 Mar;249(3):397-401.

de Kerviler S, Hüsler R, Banic A, Constantinescu MA.
Body contouring surgery following bariatric surgery and dietetically induced massive weight reduction: a risk analysis.
Obes Surg. 2009 May;19(5):553-9.

Fraccalvieri M, Datta G, Bogetti P, Verna G, Pedrale R, Bocchiotti MA, Boriani F, Obbialero FD, Kefalas N, Bruschi S.
Abdominoplasty after weight loss in morbidly obese patients: a 4-year clinical experience.
Obes Surg. 2007 Oct;17(10):1319-24.

Greco JA 3rd, Castaldo ET, Nanney LB, Wendel JJ, Summitt JB, Kelly KJ, Braun SA, Hagan KF, Shack RB.
The effect of weight loss surgery and body mass index on wound complications after abdominal contouring operations.
Ann Plast Surg. 2008 Sep;61(3):235-42.

Hatef DA, Kenkel JM, Nguyen MQ, Farkas JP, Abtahi F, Rohrich RJ, Brown SA.
Thromboembolic risk assessment and the efficacy of enoxaparin prophylaxis in excisional body contouring surgery.
Plast Reconstr Surg. 2008 Jul;122(1):269-79.

Igwe D Jr, Stanczyk M, Lee H, Felahy B, Tambi J, Fobi MA.
Panniculectomy adjuvant to obesity surgery.
Obes Surg. 2000 Dec;10(6):530-9.

Leahy PJ, Shorten SM, Lawrence WT.
Maximizing the aesthetic result in panniculectomy after massive weight loss.
Plast Reconstr Surg. 2008 Oct;122(4):1214-24.

Rohrich RJ, Gosman AA, Conrad MH, Coleman J.
Simplifying circumferential body contouring: the central body lift evolution.
Plast Reconstr Surg. 2006 Aug;118(2):525-35; discussion 536-8.

Shermak MA, Rotellini-Coltvet LA, Chang D.
Seroma development following body contouring surgery for massive weight loss: patient risk factors and treatment strategies.
Plast Reconstr Surg. 2008 Jul;122(1):280-8.

Stuerz K, Piza H, Niermann K, Kinzl JF.
Psychosocial impact of abdominoplasty.
Obes Surg. 2008 Jan;18(1):34-8.

Other:

Abdiu A, Elander A, Gerdin B, Hedenbro J, Ringberg A, Troëng T, Wickman M.
Bukplastik och liknande operationer – rapport från expertgruppen för plastikkirurgi
Nationella Medicinska Indikationer 2008

Biörserud C, Olbers T, Fagevik olsen M.
Patient`s experience of surplus skin after laparoscopic gastric bypass.
Obes Surg. **2009** May;20

Kelly HA.
Excision of the fat of the abdominal wall-lipectomy.
Surg Gyn Obstet 1910;10:229-231.

Patterson J.
Outcomes of abdominoplasty.
STEER 2003;3(2)

Tercan M, Bekerecioglu M, Dikensoy O, Kocoglu H, Atik B, Isik D, Tercan A
Effetcs of abdominoplasty on respiratory functions: A prospective study.
Ann Plast Surg. **2002** Dec;49(6):617-20

Toranto I.
The relief of low back pain with the WARP abdominoplasty: A preliminary report, plastic and reconstructive surgery
Plast Reconstr Surg. 1990 Apr;85(4):545-55

Jämförande etisk analys utförd enligt aktörsmodellen mellan att göra bukplastik och att avstå från denna åtgärd efter en operation för fetma

Sjukdomen

Det vetenskapliga underlaget är bristfälligt. Långtidsuppföljning av medicinska och psykologiska konsekvenser saknas. Komplikationsfrekvensen bedöms vara hög men av mindre allvarlig natur. Det finns klinisk erfarenhet som styrker att metoden har effekt.

Etiska värden som använts vid analysen

Människosyn
Människovärde
Att göra gott
Jämlik vård
Autonomi
Integritet
Särbehandling
Livskvalitet
Undanträngningseffekter

Identifierade aktörer som använts vid analysen

Individen
Närstående
Sjukvården
Samhället

Etiska perspektiv

Konflikt mellan människovärde och människosyn

Det finns ett värde i att ”se normal ut” vilket gör att operationerna stärker den enskilda individens människovärde. Detta medför minskad risk för individen att negativt särbehandlas beroende på ett avvikande utseendet.

Samtidigt finns risk att människosynen påverkas negativt. Att samhället ställer sig bakom en operation av denna karaktär kan uppfattas så att människor med ett avvikande utseende i allmänhet är mindre värda än människor med ett ”normalt utseende”.

Om den enskilda individen fattar ett självständigt beslut om att göra operationen reduceras risken för konflikt.

Jämlik vård

Det föreligger geografiska skillnader mellan olika delar av landet i antalet utförda operationer. Denna observation gör att det finns anledning misstänka att operationen inte uppfyller kraven på jämlik vård. Information om flera viktiga bakgrundsvariabler saknas vilket gör slutsatsen osäker.

Autonomi och integritet

Operationen ingår som en del i behandlingen av fetma. För att tillförsäkra individen självbestämmande bör information inför en operation för fetman även inkludera att denna åtgärd kan leda till behov av bukplastikoperation. Ett sådant förfaringssätt stärker skyddet för individens integritet.

Särbehandling

Flera kvinnor än män opereras och det är osäkert huruvida denna särbehandling är motiverad.

Livskvalitet

Livskvaliteten för den opererade individen och för de närstående förbättras genom operationen.

Undanträngningseffekter

Metoden innebär att stora delar av den nuvarande plastikkirurgins resurser kommer att tas i anspråk för en åtgärd, vilket innebär att andra nödvändiga rekonstruktiva åtgärder inte kommer att genomföras eller senareläggas.

Sammanfattning

Det vetenskapliga underlaget är bristfälligt men det finns beprövad klinisk erfarenhet som styrker antagandet om att metoden har effekt framför allt genom att den stärker den opererade individens livskvalitet. Genom att företrädare för plastikkirurgi är medveten om konflikten mellan människovärde och människosyn som verksamheten ger uttryck för kan eventuella skadliga effekter av denna undvikas. Såsom verksamheten hittills har bedrivits är vården ojämlik och det finns risk för att män blir omotiverat negativt särbehandlade. För att stärka den opererade individens autonomi och därigenom även dennes integritet bör information ges om att det kan finnas behov av bukplastikoperation redan i samband med operationen för fetma. Eftersom det vetenskapliga underlaget är bristfälligt bör metoden om den införs följas genom t.ex. kvalitetsregister och när kunskapen är tillräcklig bör en ny etisk analys genomföras.

Analysen utförd av Jan Wahlström den 17/11 2009

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