

# Is There a Limit?

## A Risk Assessment Model of Concurrent Trunk Liposuction with Abdominoplasty

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American Association of Plastic Surgeons (AAPS)  
96<sup>th</sup> Annual Meeting  
March 27, 2017



# Disclosures

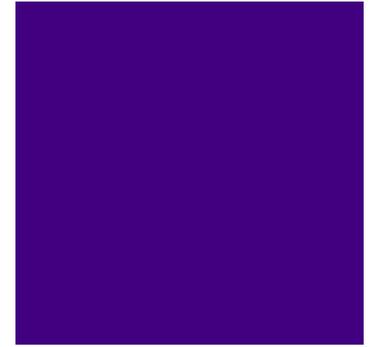
- No internal or external grant funding
- No relevant financial disclosures related to this work

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# Combining Abdominoplasty with Trunk Liposuction



- 127,633 abdominoplasties in 2016.<sup>1</sup>
- Commonly performed with trunk liposuction

# Abdominoplasty without Liposuction – Suboptimal Result

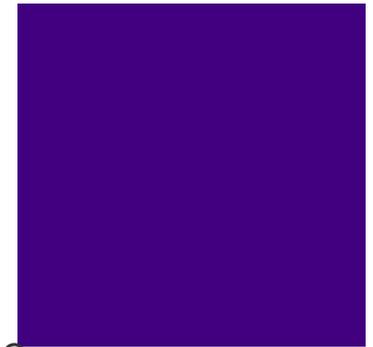


# Trunk Liposuction Improves Results of Abdominoplasty



**4300 mL lipoaspirate removed at time of abdominoplasty**

# Risk of Combining Abdominoplasty with Trunk Liposuction



- Thrombotic or fat embolic problems<sup>2,3</sup>
- Conflicting reports on increased risk of seroma<sup>4,5</sup>
- Potential for compromised vascular supply resulting in soft-tissue necrosis of abdominal flap

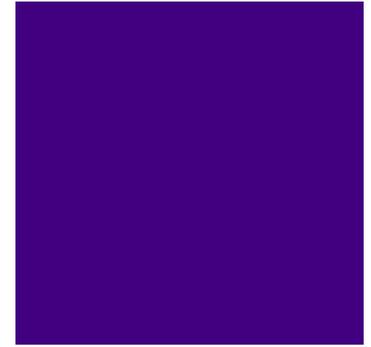
2. Vogt, P.A. Abdominoplasty techniques. *Clin Plast. Surg.* 16:279, 1989.

3. Clayton, D. N., et al., Large volume lipoplasty. *Clin Plast Surg.* 16: 305, 1989.

4. Najera, R.M. et al. Comparison of seroma formation following abdominoplasty with or without liposuction. *Plast Reconstr Surg.* 2011

5. Samra, S., et al. Complication rates of lipoabdominoplasty versus traditional abdominoplasty in high risk patients. *Plast Reconstr Surg.* 2010

# Legislative Limits on Liposuction with Abdominoplasty



- Little evidence
- State regulation limits of 0 mL to 2,000 mL lipoaspirate when combined with other procedures<sup>6-9</sup>

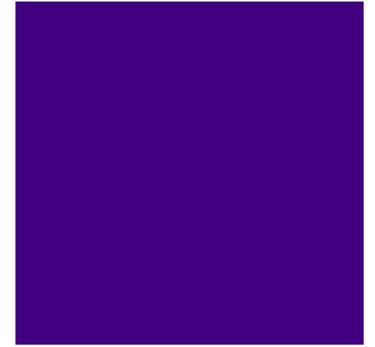
6. American Society of Plastic Surgeons (ASPS), Collateral, Lipoaspirate Volume By State, 2015.

7. Ohio Administrative Code – State Medical Board. OAC 4731-24-05(d).

8. Florida State Statute. Fla. Stat. 458.309(3).

9. Tennessee Compiled Rules and Regulations – State Board of Medical Examiners. Ten. Comp. R. & Regs. 0880-02-.21(7)(d)(8)(a)-(8)(a)(1).

# Hypotheses

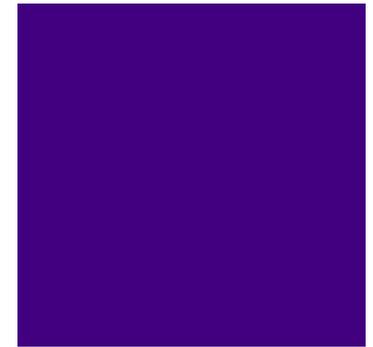


- 1) Truncal liposuction combined with abdominoplasty is safe when done by board certified Plastic Surgeons
- 2) Current lipoaspirate guidelines do not reflect true surgical risk and are arbitrary

# Methods

- TOPS Database
- Lipoaspirate volume reflects extent of liposuction
- Patients undergoing abdominoplasty (CPT 15847) alone or in combination with truncal liposuction (CPT 15877)
- Mini abdominoplasties (CPT 17999) **excluded** to exclude techniques where superior skin flap is preserved
- 1,612 cases with known lipoaspirate volume (range: 20 mL – 8800 mL, mean: 1620 mL  $\pm$  1300 mL)
  - 47 cases [2.9%] with volume > 5000 mL

# Demographics of Included Patients



**Table 1.** Patient Demographics and Operative Characteristics by Abdominoplasty vs Abdominoplasty with Liposuction

	Abdominoplasty (n=1553)	Abdominoplasty with Liposuction (n=9638)	<i>p</i> -value
	n or %	n or %	
Age	45.4 ± 12.3	43.6 ± 12.2	<0.001*
BMI	29.6 ± 8.4	27.9 ± 6.8	<0.001*
Male Sex	9.4%	6.0%	<0.001*
ASA ≥ 3	1.4%	3.9%	<0.001*
Current Smoker	1.6%	4.6%	<0.001*
Diabetes	2.3%	3.8%	0.003*
Operative Time (minutes)	168.1 ± 76.7	173.4 ± 77.3	0.012*

\*Denotes statistical significance <0.05

# Complication Profiles

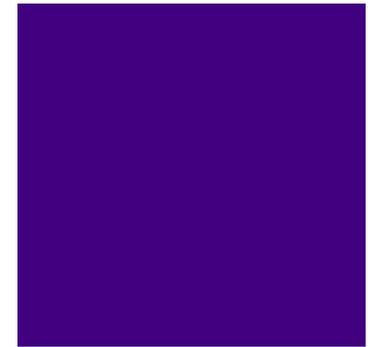


**Table 2.** Complication Rates by Abdominoplasty vs Abdominoplasty with Liposuction

	Abdominoplasty (n=1553)	Abdominoplasty with Liposuction (n=9638)	<i>p</i> -value
	%	%	
Overall Complications	13.0%	10.5%	0.003*
Surgical Complications	11.5%	9.3%	0.006*
Seroma Requiring Drainage	5.5%	3.6%	0.001*
Hematoma Requiring Drainage	1.5%	0.8%	0.015*
Wound Disruption	3.4%	4.0%	0.216
Operative Infection	2.0%	1.8%	0.644
Flap Loss	0.1%	0.3%	0.248
Medical Complications	0.6%	1.0%	0.088
Venous Thromboembolism	0.4%	0.5%	0.700
Unplanned Return to the Hospital	3.2%	2.8%	0.310
Death	0.1%	0.1%	0.307

\*Denotes statistical significance <0.05

# Effect of Liposuction with Abdominoplasty on Complications



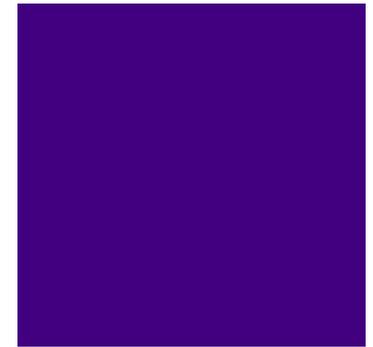
**Table 3.** The Effect on Morbidity of Adding Adjuvant Liposuction to Abdominoplasty

	Odds Ratio	95% Confidence Interval	<i>p</i> -value
Overall Complications†	0.80	0.65-0.99	0.046*
Surgical Complications†	0.80	0.64-1.00	0.054
Seroma	0.70	0.50-0.97	0.030*
Hematoma	0.76	0.40-1.47	0.415
Wound Disruption	1.02	0.73-1.42	0.909
Wound Infection	0.96	0.59-1.55	0.867
Medical Complications	1.47	0.66-3.28	0.343
Venous Thromboembolism	0.88	0.30-2.55	0.810
Unplanned Hospital Returns†	1.24	0.80-1.93	0.344

\*Denotes statistical significance  $<0.05$ ; Abdominoplasty alone serves as the reference group

†Patients may have more than one complication

# Effect of Liposuction Volume on the Likelihood for Complications



**Table 4.** The Effect of Increasing Liposuction Volume (L) on the Likelihood for Complications

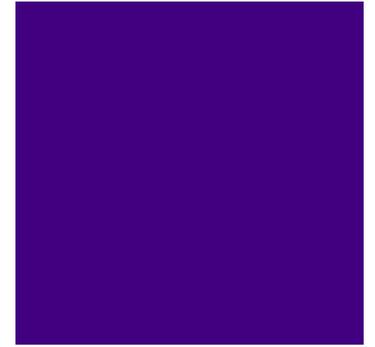
	Odds Ratio	95% Confidence Interval	<i>p</i> -value
Overall Complications†	0.31	0.77-1.07	0.247
Surgical Complications†	0.90	0.76-1.07	0.237
Seroma	0.88	0.69-1.14	0.341
Hematoma	0.30	0.06-1.42	0.130
Wound Disruption	0.97	0.78-1.21	0.775
Wound Infection	0.84	0.53-1.32	0.450
Medical Complications	0.84	0.56-1.26	0.395
Unplanned Hospital Returns†	0.89	0.69-1.15	0.371

\*Denotes statistical significance <0.05

†Patients may have more than one complication

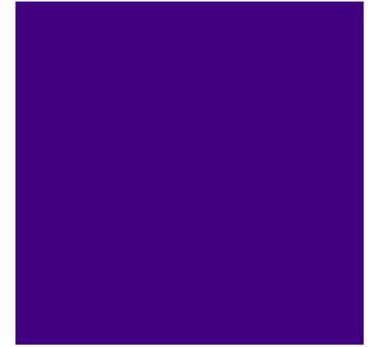
Includes 1,612 patients with recorded lipoaspirate volumes

# Limitations



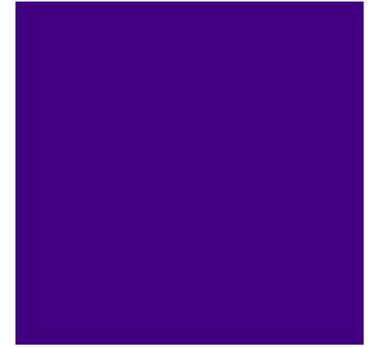
- Inability to delineate exact technique of abdominoplasty procedure and location of liposuction
- Only 30-day patient follow-up
- Physician reported outcomes instead of trained surgical data abstractors

# Conclusions



- When done by board certified Plastic Surgeons, abdominoplasty with truncal liposuction is a safe procedure
- Current lipoaspirate guidelines do not accurately reflect surgical risk

# Thank You!



## ANY QUESTIONS?

*For questions or inquiries, please feel free to contact us at:*

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