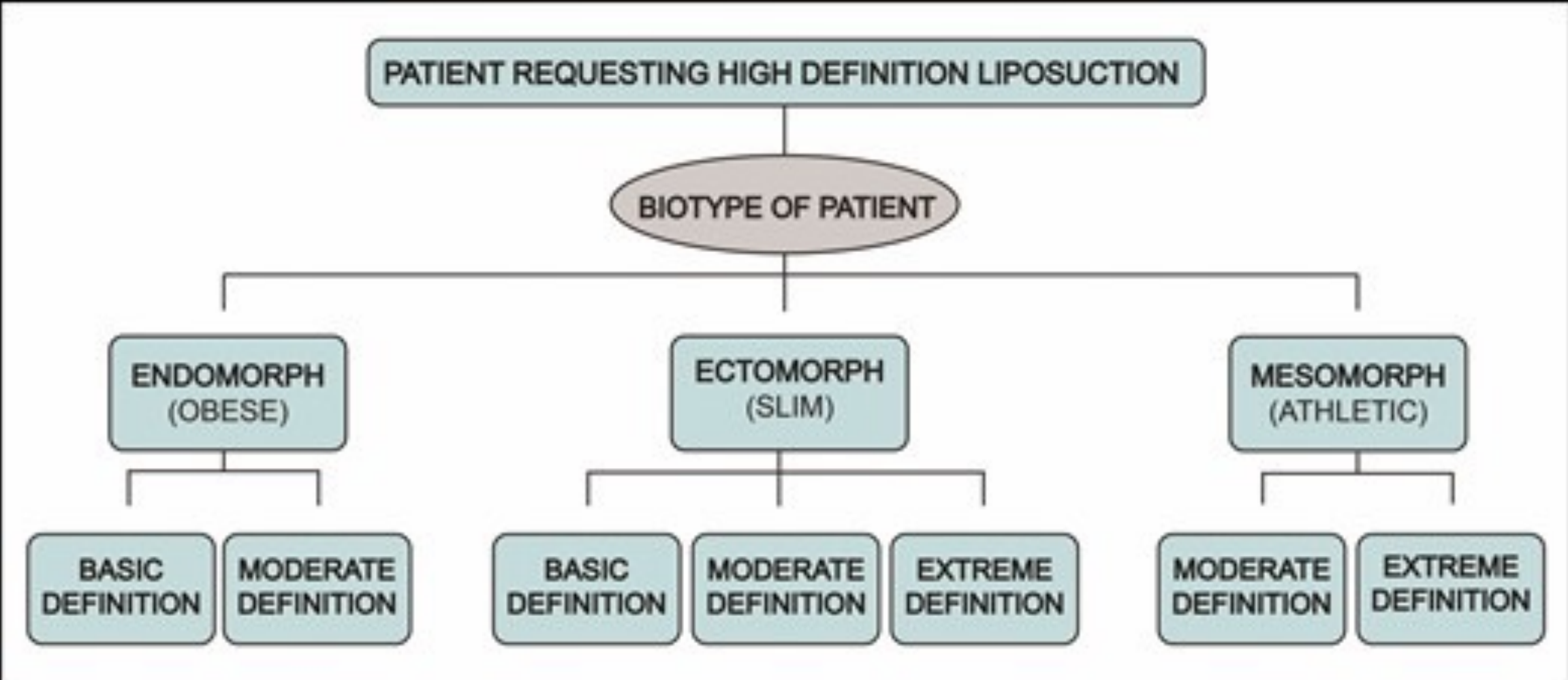


Where Does Society Stand On Female Abdominal Definition? A Crowdsourced Investigation and Implications for High-definition Liposuction

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Introduction & Objective

- The athletic depiction of the female physique has risen in popularity, mirrored by the surge in techniques to achieve increased rectus abdominus definition such as high-definition liposuction
- Alfredo Hoyos formulated the “BMX” protocol, which outlines the body types he recommends pursuing basic(B), moderate(M), or extreme(X) etching.



From: Hoyos AE, Perez ME, Dominguez-Millán R. Variable Sculpting in Dynamic Definition Body Contouring: Procedure Selection and Management Algorithm. Aesthet Surg J. 2021 Feb 12;41(3):318-332.

- **Objective:** To discern the population’s preference for varying degrees of female abdominal etching, and to understand how this preference is influenced by respondent age, gender, sexuality, and race.

Methods

- A photo-realistic 3D scan of a female trunk was sculpted using ZBrush to showcase **three levels of abdominal etching: basic, moderate, and extreme contour.**
- These iterations were integrated into a crowdsourcing survey on Amazon Mechanical Turk.
- Participants were tasked with rating each image on a 7-point Likert scale, with 7 being the highest rating.
- Participants were also asked to rank the three images from least to most attractive.



Figure. Base 3D scan used for sculpting.

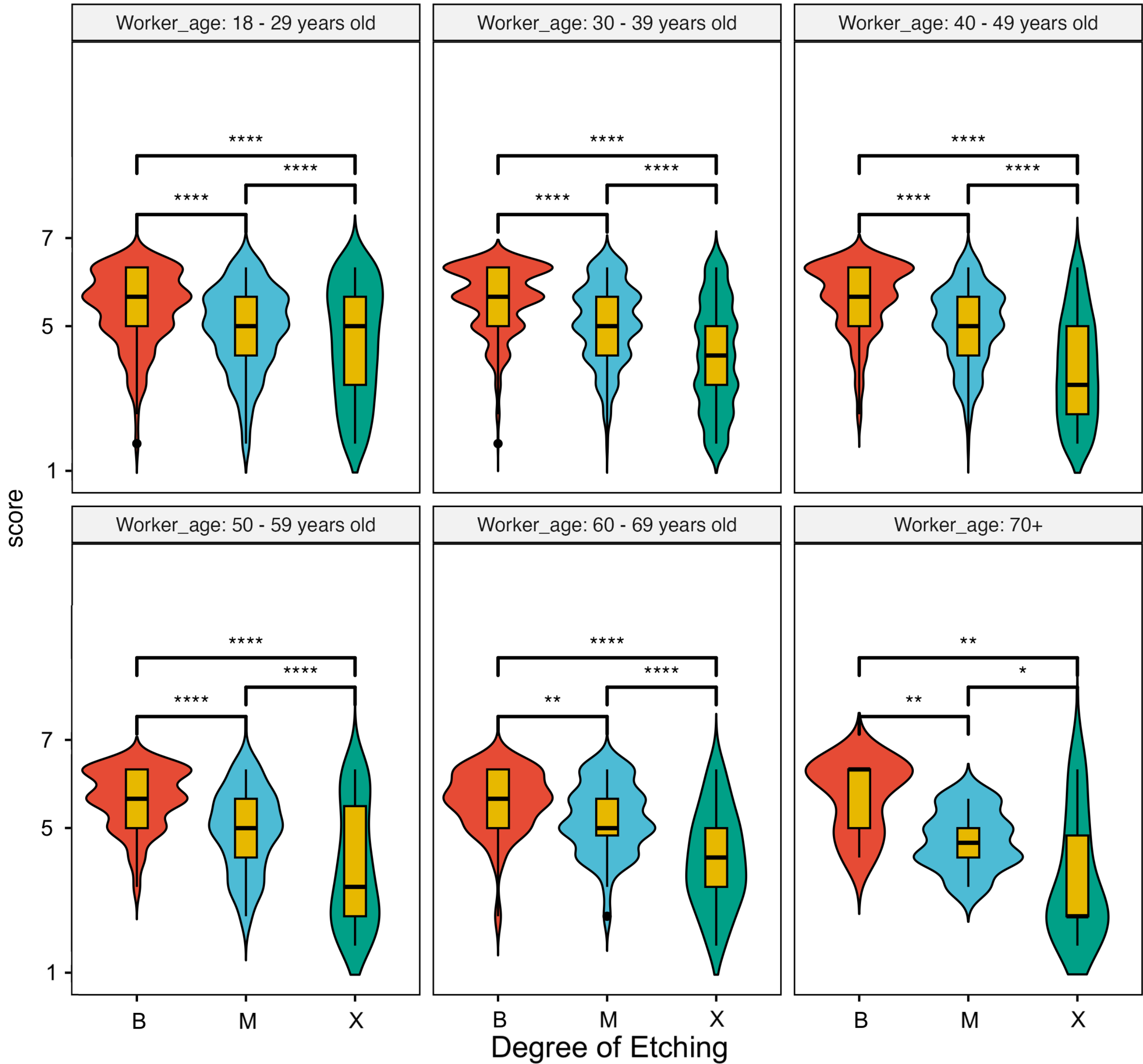


Figure. Violin plots showing the attractiveness response density for different ages. Note the top-heavy preference for X by 18-29 compared to the rather bottom-heavy distribution by older groups.



B

M

X

Figure. The ZBrush sculpted abdomens based on Hoyos’s technical guidelines.

Results

- A total of 976 respondents engaged in the survey and met inclusion criteria.
- The basic contour received the highest attractiveness median [IQR] score of 6.0 [2.0], the moderate contour at 5 [2.0], and the extreme contour at 4 [4.0] (P<0.001).
- **Compared to extreme contour, respondents were 82.3 times as likely to rate basic contour a 7.0 and 15.4 times as likely to rate moderate contour a 7.0 (both P<0.001).**
- Respondents across demographic subgroups ranked the basic contour the most attractive (all P<0.001).

Respondent Demographics	Respondents (n)	Basic (median [IQR.0])	Moderate (median [IQR])	Extreme (median [IQR])	P-Value
All	976	6.0 [2.0]	5.0 [2.0]	4.0 [4.0]	<0.001*
Age (years)					
18-29	238	6.0 [2.0]	5.0 [2.0]	5.0 [3.0]	<0.001*
30-39	398	6.0 [2.0]	5.0 [2.0]	4.0 [2.0]	<0.001*
40-49	191	6.0 [2.0]	5.0 [2.0]	3.0 [3.0]	<0.001*
50-59	91	6.0 [2.0]	5.0 [2.0]	3.0 [4.0]	<0.001*
60-69	44	6.0 [2.0]	5.0 [2.0]	4.0 [2.0]	<0.001*
70+	14	7.0 [2.0]	4.5 [1.0]	2.0 [3.0]	<0.001*
Gender					
Female	581	6.0 [2.0]	5.0 [2.0]	4.0 [4.0]	<0.001*
Male	376	6.0 [2.0]	5.0 [2.0]	4.0 [2.0]	<0.001*
Sexuality					
Bisexual	181	6.0 [2.0]	5.0 [2.0]	5.0 [2.0]	<0.001*
Heterosexual	691	6.0 [2.0]	5.0 [2.0]	4.0 [3.0]	<0.001*
Homosexual	68	6.0 [2.0]	5.0 [2.0]	5.0 [3.0]	<0.001*
Race					
Black	56	6.0 [2.0]	5.0 [2.0]	5.0 [3.0]	<0.001*
Caucasian	627	6.0 [2.0]	5.0 [2.0]	4.0 [3.0]	<0.001*
East Asian & Pacific Islander	42	6.0 [3.0]	5.0 [2.0]	4.0 [2.0]	0.002
Hispanic	77	6.0 [1.0]	5.0 [3.0]	5.0 [3.0]	<0.001*
Middle Eastern	9	6.0 [1.0]	5.0 [2.0]	3.0 [4.0]	0.019
Native American	61	5.0 [1.0]	5.0 [2.0]	6.0 [2.0]	0.473
South Asian	104	5.0 [2.0]	5.0 [2.0]	4.0 [3.0]	<0.001*

Conclusion

- Our findings demonstrate that the overall population significantly prefers basic abdominal contour.
- **Analysis of demographic subgroups revealed that younger populations are beginning to favor extreme levels of contour more than their older counterparts.**
- The BMX paradigm provides a schematic for contouring options, but basic contour still resonates as the most attractive female meso/ectomorphic physique.