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Designing for Disorder:

INSTAGRAM'S PRO-EATING
DISORDER BUBBLE IN
AUSTRALIA

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Reset.
AUSTRALIA





Please note, to adequately highlight the problems of eating disorder content on Instagram, this paper includes some images and text that may be triggering. We understand that this discussion is important to some people in recovery or their families, so an image/text free version of this paper is available on request at hello@au.reset.tech



Executive Summary

This report documents how Instagram's algorithm has grown and promoted an extensive pro-eating disorder 'bubble', and how they turn a small but steady profit from this bubble. It finds:

- The pro-eating disorder bubble on Instagram includes 90,000 unique accounts and reaches **20 million unique followers on the platform**. This could be one in 50 Instagram users who follow someone in this bubble.
- This bubble is young. This research found children as young as 9 and 10 following three or more eating disorder accounts, with a median age of 18. **One third of Instagram's pro-eating disorder bubble is underage**, and they have over half a million followers.
- Meta derives an estimated \$2 million revenue a year from this bubble, or \$227.9 million from all those who follow this bubble. This revenue includes that derived from underage users – Meta directly makes \$0.5 million a year from the underage pro-eating disorder bubble, or \$62 million revenue from the people who follow these underage pro-eating disorder accounts.

In addition to being profitable, this bubble is also undeniably harmful. Algorithms are profiling children and teens, to serve them images, memes and videos encouraging restrictive diets and extreme weight loss. And in turn, Instagram is promoting and recommending children and teen's eating disorder content to half a

million people globally. The promotion and reach of this content is clearly not in the best interests of children and teenagers.

Meta's pro-eating disorder bubble is not an isolated incident nor an awful accident. Rather it is an example of how, without appropriate checks and balances, Meta systematically puts profit ahead of young people's safety and wellbeing. Meta's decisions around hosting and recommending eating disorder content may deliver small but steady profits to shareholders, but it has significant real life consequences for children and young people.

Documents revealed in the Facebook Files suggest Meta have been aware of this problem since at least 2019 and have failed to act. It is time that lawmakers and regulators around the world demand action.

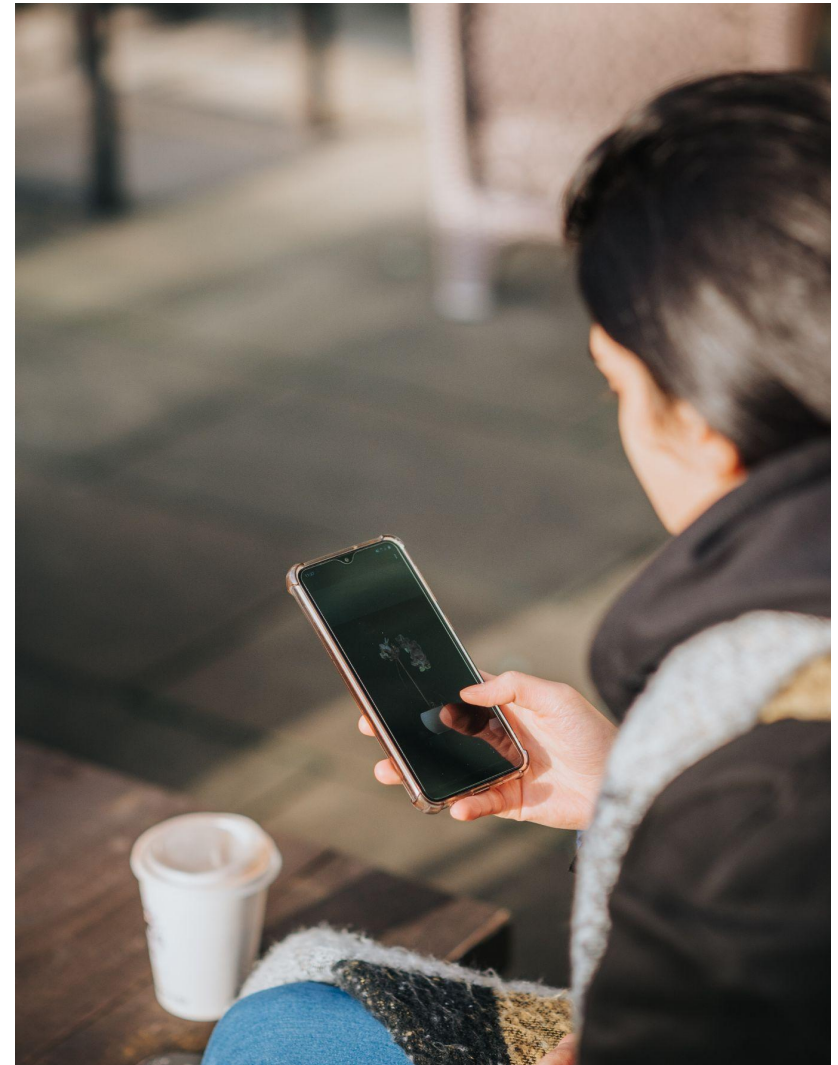
We need regulation to ensure that children's best interests must be put at the heart of any digital platform operating in Australia.

The Enhancing Online Privacy Bill, which would in part do this, was not introduced into the Senate before the election was called, and that's a real missed opportunity for kids. We need Labor and the Coalition to commit to passing legislation no matter who wins.

This report builds on global research undertaken with Fairplay.

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Foreword

Professor Hany Farid, Head of School, School of Information, University of California, Berkeley, co-creator PhotoDNA

We can't pretend that the internet has not had a phenomenally positive impact on some aspects of our lives, societies, and economies. We also can't pretend that the internet has not led to real harm in the form of child exploitation, terrorism, the sale of deadly drugs, small- to large-scale fraud, invasions of our privacy, and the spreading of dangerous disinformation campaigns.

In part, this is because the titans of tech are built around an ad-driven business. It is said that if the product is free, then you are not the customer, you are the product. Revenue in social-media's ad-driven model is maximized by maximizing user engagement which means that, more often than not, privacy and security take a back seat in the name of engagement-based metrics.

While reasonable people can agree on what safeguards, if any, should be put in place to protect consenting adults from online harms, most reasonable people will also agree that special care should be given to children.

From the global yearly distribution of tens of millions of pieces of child sexual abuse material, to child grooming and sextortion, screen-time addiction, age-inappropriate advertising, and unhealthy body images, we must think more carefully about the impact of

powerful technologies placed in the hands of children for every waking movement of their young lives.

There has been a tendency to talk separately about our online and offline lives. The boundaries between online and offline, however, have been obliterated and what happens online has real-world consequences. As such, we need to think about today's online safety the same way we have thought of yesterday's offline safety.

There are practical, measured, and reasonable safeguards that can be put in place to protect children. Many of these measures begin — but do not end — with ensuring that products are, by design, safe for children and ensuring that services do not intentionally or unintentionally market age inappropriate content to children, or connect children with adult predators.

The technology sector has proven that it is unable or unwilling to prioritize children's welfare and so the time has come regulators to step in. Requirements to put children's best interests first are a step in the right direction and worthy of serious deliberation.



Introduction

Algorithms drive much of what we see on social media platforms. For example, in 2018, YouTube outlined that around 70% of what people viewed on that platform was a result of their recommender algorithm¹. Algorithms drive recommendations of what content to see, watch, who to follow, or who to friend. While they may sound impenetrably technical, at the end of the day algorithms are just simply pieces of code; written and developed by humans, that can be changed by humans.

Algorithms shape the creation of ‘bubbles’ and networks on social media platforms by recommending what and who users should follow, and they define the reach of content. This includes the creation of troubling bubbles and the reach of harmful content.

For users, including young users, this means algorithms can create ‘bubbles’ around them. Algorithms use all the data a platform has about a young person – including their browsing history in a platform, data tracked about them from other websites via cookies, and demographic data young people have shared with platforms among others – to decide what content to recommend to young people and suggest who they follow.

This report documents the shape and reach of one troubling bubble – those in the pro-eating disorder bubble on Instagram. It documents the size, reach and demographics of users in this

bubble, capturing a glimpse at an algorithmically amplified community that captures many young users.

The existence of this bubble should be unsurprising to those at Instagram and Meta, their parent company. In 2019, Meta (then Facebook) commissioned internal research to explore the impact of Instagram on teenagers. The results were damning. Meta’s own research found that Instagram made body issues worse for one third of teen girls. Again in 2020, Meta’s own internal research found that Instagram could push teens toward eating disorders, an unhealthy sense of their own bodies and depression. That research noted that the Explore page, which serves users photos and videos curated by its own algorithm, often sends users deep diving into content that can be harmful².

Despite knowing these risks, Meta has not taken adequate action. They are still using all of the data they hold about young people – their browsing history, their tracking data and demographics – to fine tune algorithms that are pushing young users into harmful bubbles. This research documents one potentially harmful bubble that Instagram’s algorithm has amplified, but many others exist.

¹ Ashley Rodriguez 2018 ‘YouTubes recommendations drive 70% of what we see’ *Quartz*
<https://qz.com/1178125/youtubes-recommendations-drive-70-of-what-we-watch/>

² Georgia Wells, Jeff Horowitz and Deepa Seetharaman 2021 ‘Instagram is toxic for teens’ *Wall Street Journal*
<https://www.wsj.com/articles/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>

Methods & Identifying the pro-eating disorder bubble

This research involved four methodological steps:

1. A 'seeding phase', where researchers selected 153 popular Instagram profiles that post content that normalises, celebrates or promotes eating disorders and extreme weight loss. Seed accounts were selected when they were public, had over 1,000 followers and met two of the three criteria:
 - They posted visual content that celebrated "thinspiration" or "bonespiration", such as positive imagery of extremely underweight people or other eating disorders memes;
 - They had an underweight body mass index as indicated in their biography. Often BMI was mentioned in bio, or a user's height and current and goal weight were stated in bio allowing their BMI to be calculated;
 - Their biography, username, or description of the content or comments contained Eating Disorder community-relevant vocabulary, such as ed (eating disorder), tw(trigger warning), ana (anorexia), mia (bulimia) etc.
2. Detailed analysis of the followers of these 153 seed accounts. These seed accounts had a total of almost 2.3 million followers (2,286,849 in total). However, many Instagram users followed more than one of these seed accounts. Using publicly available information from account biographies we were able to estimate that 69.96% of these followers were unique users. This means in total, an estimated 1.6 million unique users follow the 153 seed accounts we identified (1,599,880 in total).
3. Of these 1.6 million unique users, we identified those as "within the pro-eating disorder bubble" if they followed three or more of our seed accounts. Each of these seed accounts normalises, glamorises or promotes eating disorders. For this research, we identified 88,655 members of the ED community. These 88,655 accounts were used for this research.
4. Analysis of the available data about these 88,655 users, and sub-samples of them, to better understand their ages, geographies and reach.

No accounts that appeared to be 'recovery journals' or health awareness accounts were included in the seed accounts.

More details about the method can be found in the Appendix.



Figure 1: Examples of content from the three of the larger seed accounts. In this research, users that followed three or more of these seed accounts were included as in the pro-eating disorder bubble.

Instagram's pro-eating disorder bubble

Instagram's algorithm has given the pro-eating disorder bubble huge reach: One in every 75 accounts may follow content from them

There are 88,655 unique users in Instagram's pro-eating disorder bubble. They have a huge reach, with a total of 28.2 million collective followers.

Analysis indicates that 69.96% of accounts following this sort of content are unique, which means there are around 20 million individual users following and receiving content from Instagram's pro-eating disorder bubble (19,699,615 in total).

This means that 20 million Instagram users are fed content from Instagram's Pro-Eating Disorder bubble; content that often normalises, glamorises and promotes eating disorders and extreme weight loss in their feed. This presents a potential health risk every time 20 million users log in.

This is a problem: the latest data suggests that Instagram has 1.393 billion monthly users worldwide³. Reaching 20 million of them, the pro-eating disorder bubble could be reaching around 1.4% of Instagram's user base.

³ Jason Wise 2022 'How many people use Instagram in 2022' <https://earthweb.com/how-many-people-use-instagram/>. Meta has not released up to date figures for a number of years now, but these are the last figures that report to have been confirmed by the company



Figure 2: A network analysis showing the followers of the seed accounts on Instagram. The analysis documents the clusters of accounts that cross-follow each other, documenting multiple nodes. Nodes that are close together represent following a lot of similar accounts, while nodes that are further apart clusters are less interconnected. Larger nodes have more cross-connections than smaller nodes. Of this network, the 'bubble' analyzed is the 88,655 of the most cross connected accounts that are central to these nodes.

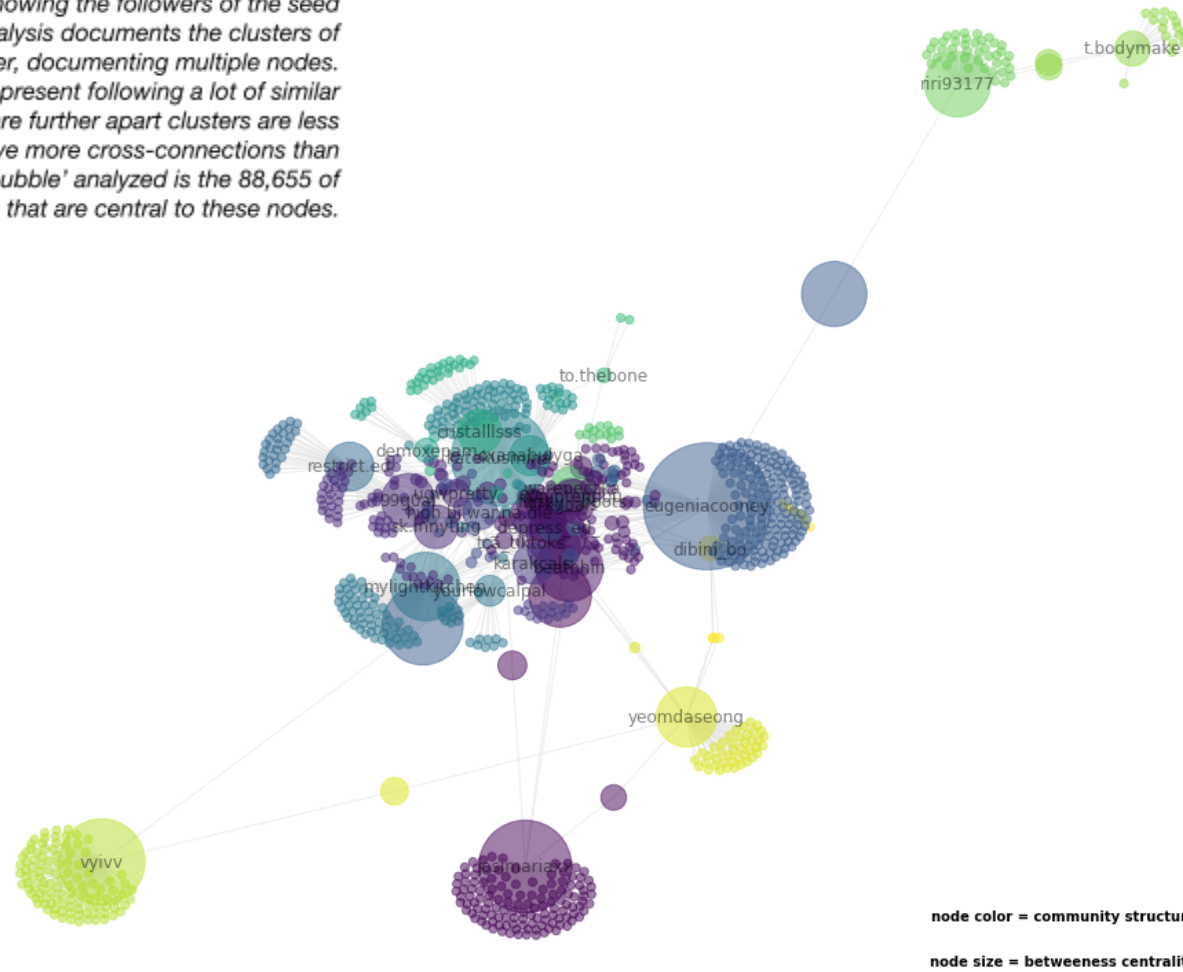




Figure 3: Types of available content posted within Instagram's pro-eating disorder bubble. Not all content posted within the bubble will be pro-eating disorder content, but much of the content of what researchers saw normalized, glamorized or promoted extreme weight loss and restrictive diets. For example the first image is of a calorie counting app, documenting the user's calorie intake ranging from 55 to 1378 calories per day, and the second image is a call out from a user asking if after other users find the third day of a 300 calorie a day diet harder. Fr = for real

FR it can't just be me on the third day of eating only 300 cals hits different

Instagram's algorithm has promoted and grown this bubble

Instagram's algorithm is responsible for the wide reach of the pro-eating disorder bubble. Test accounts developed during an earlier phase of this research series⁴ demonstrated how Instagram recommends users follow these accounts. Researchers created experimental accounts that showed an interest in pro-eating disorder content. Using vocabulary like "Thinspo" and "TW" (Trigger warning) in the biographies, and followed pro-eating disorder influencers and content, these accounts gave the algorithm all the data it needed to push them into the pro-eating disorder bubble.

Using one account as an example, it was 'active' for 5 days gaining 88 followers in that time. In a subsequent five weeks of inactivity, this account gained seven times as many followers (686 more). This growth of inactive accounts can only be down to Instagram's algorithm, which was recommending that people from the pro-eating disorder bubble follow this experimental account.

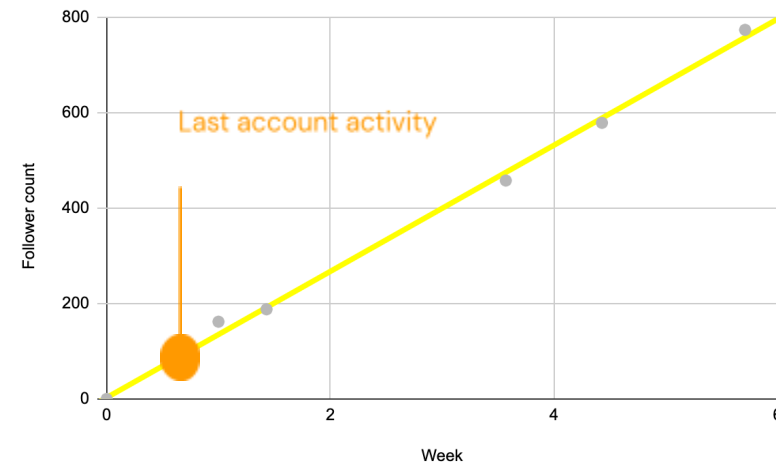


Figure 4: The algorithmically amplified growth of our experimental account. Over five inactive weeks, it gained on average 132 followers per week ($R^2 = 0.997$)

⁴ Tech Transparency Project 2021 Dangerous by design: Thinstagram
<https://www.techtransparencyproject.org/articles/thinstagram-instagram-s-algorithm-fuels-eating-disorder-epidemic>

The pro-eating disorder bubble is worryingly young

4,115 users self-identify their ages in their account biographies, providing an insight into the age range of the pro-eating disorder bubble. They were worryingly young. **The median age of users was 19**, and one in three (33.75%) accounts in the bubble belonged to someone under 18 years old.

This means that in total, 28,000 minors have been drawn into Instagram's pro-eating disorder bubble.

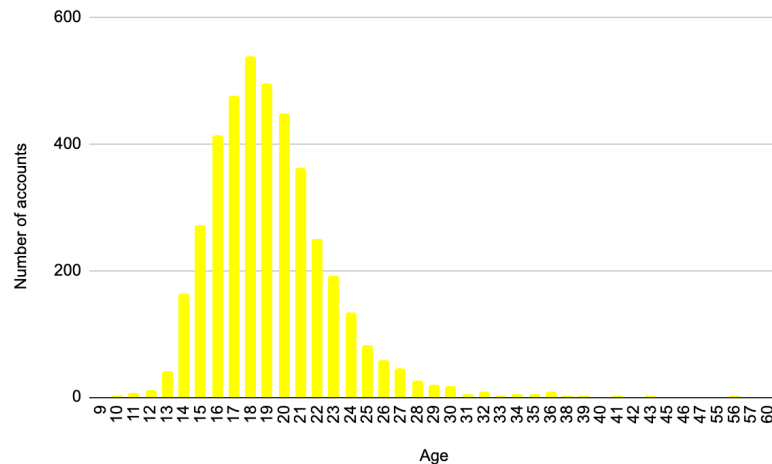


Figure 5: Self declared ages of accounts in Instagram's pro-eating disorder bubble

Figure 6: Example of account biographies in Instagram's pro-eating disorder bubble that identify age (anonymised). 'sw' for start weight, 'cw' for current weight, 'gw' goal weight, 'hw' is heaviest weight, 'ugw' is ultimate goal weight. 'HMu' is short for hit me up (or contact me)

14 🐰
 sw: 53
 cw: 49
 gw: 47
 ~~~ weigh ins & stories ~~~  
 HMu IF UR A STRICT ANA COACH 🤨

🌻 weight journal 🌻  
 67 lbs 🗝️🤍  
 61 lbs 🗝️🖤  
 51 lbs 🗝️💜  
 41 lbs 🗝️💙  
 ~Age~ 13

I want to be able to say my weight out loud with no shame  
 Length: 174 cm  
 Current weight: 59.8 kg 🍷  
 Age: 13 years old

tw  
 🖤🌸🖤  
 Height: 164.5cm  
 Age: 14  
 SW: 91kg  
 CW: 85kg  
 HW: 93kg  
 GW1: 76kg  
 GW2: 56kg  
 UGW: 41kg  
 ed [not pro-ana] block don't report

Instagram's terms and conditions state that a user must be at least 13 years old to create an account. The platform relies on children 'self declaring' their age when they sign up and there are few subsequent checks to ensure that young people under 13 years are not on the platform. There is much evidence to suggest that young people under 13 years join the platform, with a 2020 survey finding that 40% of 9-12 year olds use the platform at least once a day<sup>5</sup>.

This research was able to identify 21 young people in the pro-eating disorder bubble who stated that they are under 13 years, including users as young as 9 years<sup>6</sup>. It is likely that this vastly undercounts the number of children under 13 years in the bubble given that most children would not want to include their real age in their bio for fear of having their account reported. In fact, given Instagram's announcement in 2021 that it would use machine learning to identify and close the account of users under 13 years, it is noteworthy that we found any accounts that openly identified the users as under 13 years.

### The underage pro-eating disorder bubble has a disturbingly large reach

Instagram's algorithm amplified the reach of the underage pro-eating disorder bubble equally. Together, the minors within this bubble had 760K followers. If 69.96% of these are unique, that is **over half a million** users worldwide who follow children from within Instagram's pro-eating disorder bubble.

age: 11  
I hate food  
ana lives inside my head

12 years old  
Starving for perfection 💔

💜 I am 11 years 🍉  
💜 And this is my weight loss vlog 🍎

- ~hi~
- 12 years old 🙄
  - Maximum weight: 106 lbs 🐱
  - Minimum weight: 95 lbs 💜
  - Current weight: 99 lbs 🌻
  - Goal weight: 81 lbs 🌈
  - Weight loss diary 🐰💚

Figure 7: Example of account biographies in the bubble that identify ages under 13 (anonymised). 'Ana' is short for anorexia

<sup>5</sup> Thorn 2021 *Responding to Online Threats*  
[https://info.thorn.org/hubfs/Research/Responding%20to%20Online%20Threats\\_2021-Full-Report.pdf](https://info.thorn.org/hubfs/Research/Responding%20to%20Online%20Threats_2021-Full-Report.pdf)

<sup>6</sup> Researchers reported these accounts to Instagram where possible

## The pro-eating disorder bubble is global

Using information available in account biographies, we were able to identify regional affiliations of 3,719 users. These included descriptions like ‘📍 Perth, WA’, ‘Californian 🇺🇸’ or ‘🇬🇧 Bristol’. These may be descriptions of origin or current location. More than 40 countries were mentioned in biographies, demonstrating the global reach of the bubble.

The largest regional affiliation in the sample was Germany. This may be because one of the largest seed accounts with (138,353 followers) was a German speaking influencer, who has now passed away.

Analysis of the 1,468 users where countries and age were mentioned allows an estimate of the age range of the Eating Disorder community in various countries.

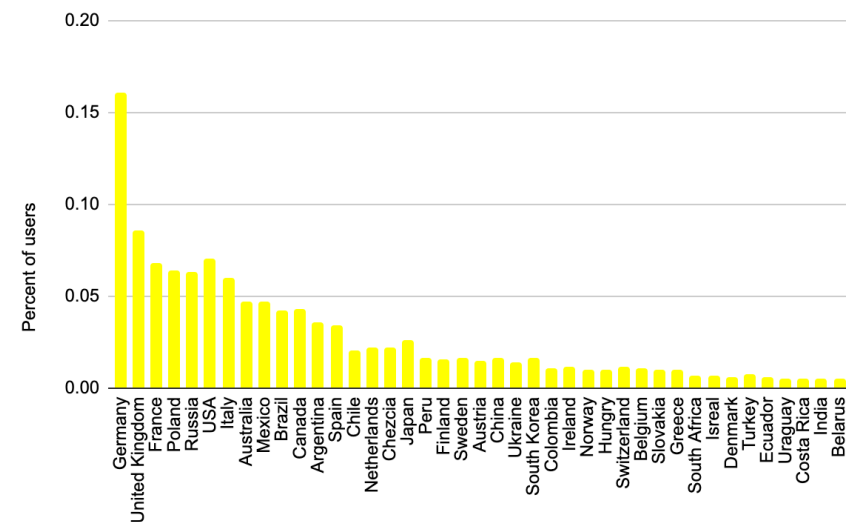


Figure 9: The geographies of the pro-eating disorder bubble on Instagram

## Australia & New Zealand's pro-eating disorder bubble

The median age of Instagram's pro-eating disorder bubble in Australia and New Zealand is 20 years old, and one in eight accounts are underage.

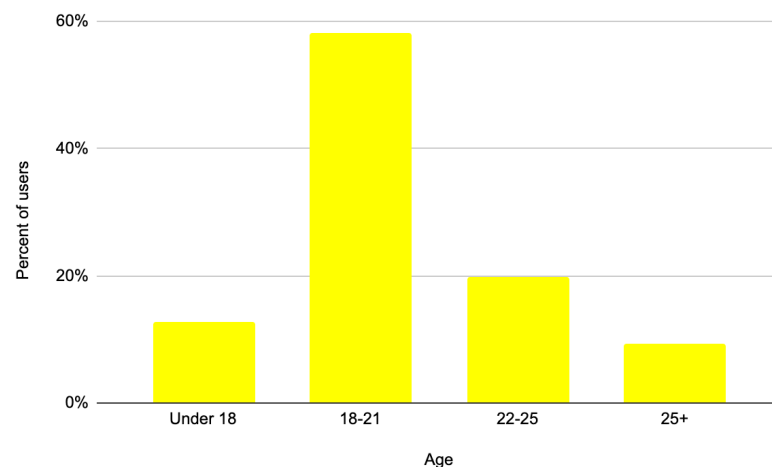


Figure 10: The self-declared ages of Instagram's pro-eating disorder bubble, Australia & New Zealand

Figure 11: Example bios in the Australian and New Zealand pro-eating disorder bubble (anonymised). 'Not pro' indicates that the account is not 'pro anorexia', a common description in biographies.

Many of the 'not pro' accounts explored in this research posted content that glamorised eating disorders, but stating that you are not-pro may help prevent reporting. Many may be in recovery but still stuck in Instagram's pro-eating disorder bubble.

[name]  
Belarussian and Australian  
10 years old  
Student

• SW: 68kg • CW: 66kg • GW1: 65kg • GW2: 50kg • 15 • 5'7 •  
Australia •

Anorexia  
Anxiety  
Depression  
Australian  
16  
Not pro ana just stuck 🌸

active since 2020 🐱  
not pro, dm if you have questions 🙄  
minor, australian 🌸  
dm to be friends 🌸



## Views from Australia

*When I first started using disordered eating terms and searching them into the search engine it would give me a suggestion of other pages to follow or other unhelpful blogs to follow, those sorts of connections can be really harmful because in those communities people may be posting whatever it is that's disordered and I think that can be really detrimental in fuelling someone's eating disorder.*

*When I was using Instagram, It was certainly my experience that things would pop up and it gets harder and harder to get rid of those suggestions. It probably took a few months before those suggestions were gone, even after unfollowing those things, things were still popping up on my page. (Now aged 23yrs)*

*In my lived experience, data mining is such a huge factor in the development and maintenance of my personal eating disorder. My usage of social media definitely reflected data collection and data mining from a very young age, under the age of 12, when things like targeted advertising was so detrimental to me.*

*I was falling victim to targeting advertising that heavily affected me and I do believe it played a role in the development of my eating disorder. As from such a young age I was exposed to this perception of health where, to be healthy you have to be fit, you have to be thin, you have to prescribe to diet culture. (Now aged 21yrs)*

*You can look at one post that might relate to disordered eating messaging and then get into a whole wormhole of looking through content for hours. You just keep scrolling down the recommended posts and get caught in all this messaging that reinforces itself and the next day there will be more content and it is a very difficult spiral to get out of sometimes.*

*YouTube was a particularly problematic website for me. I used to look up work out videos and all that kind of stuff, and because I was watching those videos, what was recommended was all this other disordered content. It suggested other Youtubers to follow and I got very trapped in that mindset for a long time.*

*You can know stuff intellectually, you can be taught all these things and yet it can still happen to you. Through unhelpful things like Youtube just posting and recommending harmful content from influencers and things. There is only so much that education and teaching people can do and a lot of it is out of our control at the end of the day. (Now aged 23yrs)*

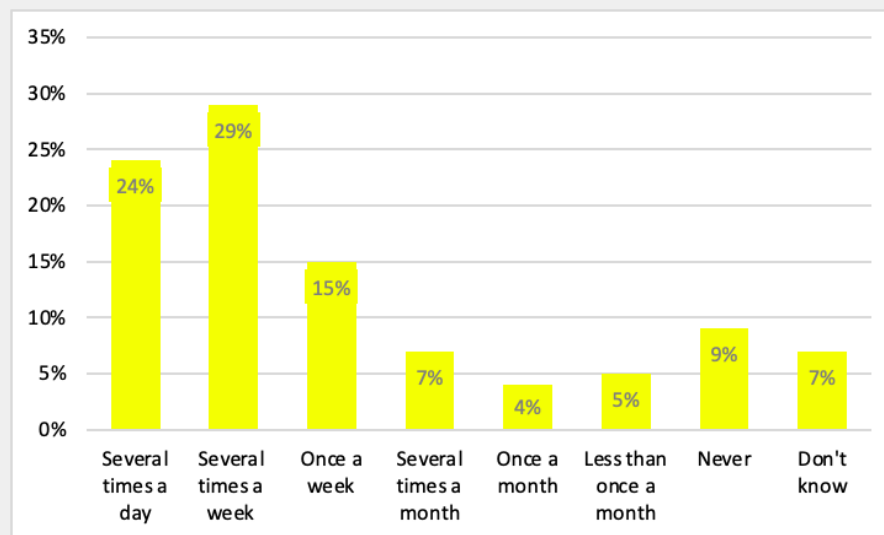
## Pro-eating disorder content is alarmingly common in young Australians' social media feeds

Alongside this research into Instagram's algorithmically curated eating disorder bubble, Reset worked with YouGov to poll 500 16 & 17 year old Australians to ask about the prevalence of content that promotes extreme weight loss and unhealthy diets in their social media feeds.

We found that the majority of Australian teenagers see extreme weight loss and unhealthy diet content in their feed multiple times a week, with around a quarter saying they see this content several times a day.

The situation was worse for young women. 32% of 16 & 17 year old girls report seeing content that promotes, glamorises or normalises extreme weight loss several times a day, compared to 19% of trans and gender diverse young people and 17% of boys

This demonstrates how widespread the issue is and the reach of this sort of content. This content is amplified outside and beyond Instagram, outside the 'bubble' and reaches the majority of young people.



*Figure: The frequency with which 16 & 17 year old Australians report seeing content that promotes, glamorises, or normalises extreme weight loss or unhealthy diets on social media*

## America's pro-eating disorder bubble

The median age of Instagram's pro-eating disorder bubble in the United States is 20 years old, and one quarter declare that they are minors.

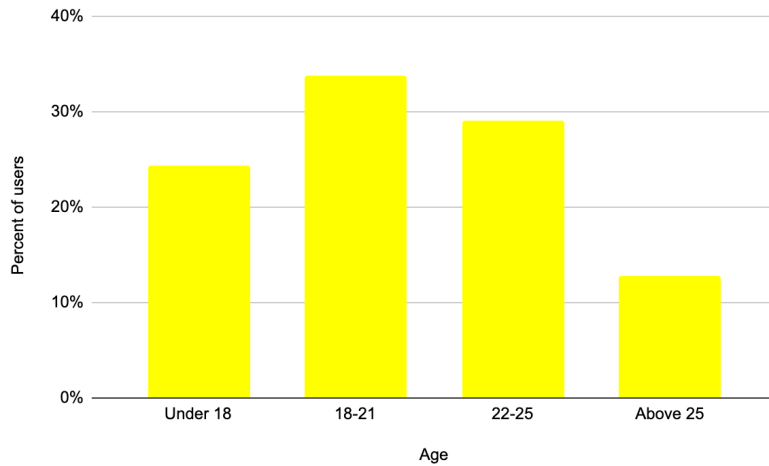


Figure 12: The self-declared ages of Instagram's pro-eating disorder bubble, USA

Figure 13: Example bios in the American pro-eating disorder bubble (anonymised). 'Don't report just block' is the user encouraging others not to report the account, rather to just block it from their feed. 'TW' is short for trigger warning, and 'ed' for eating disorders. 'h' represents height or heaviest weight

sugar free mountain dew addict  
don't report just block



•15•

5'1

CW: 101 goal: 83



lifestyle and recipes 🤔

•eating disorders, self harm

•15 y.o.



•max 131

•min 101

15/4'11/california

sw 96 lbs

cw 85 lbs

gw1 90 lbs

gw2 86 lbs

gw3 81

general ed content

16 yo | h: 161 cw: 126 gw: 100

## The UK's pro-eating disorder bubble

The median age of Instagram's pro-eating disorder bubble in the United Kingdom is 19.5 years old, and one quarter are underage.

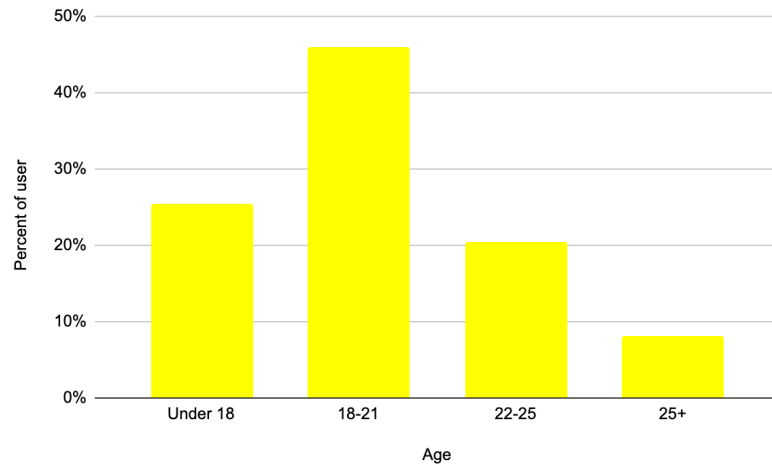


Figure 14: The self-declared ages of Instagram's pro-eating disorder bubble, UK

Figure 15: Example bios in the UK's pro-eating disorder bubble (anonymised). 'TW' means trigger warning

15 | not eating so mainly here just to blog 😊  
| England 🇬🇧 | SW: 52.5 CW:48.0 GW:45 UGW:41

🌻(name)/15/ 🇬🇧  
🌸 cw: 130lbs  
🌸 gw: 49lbs  
💕 tw - please unfollow or block, don't report, thank you  
⚠️ meanspo warning ⚠️

⚠️ TW ⚠️  
between relapse & recovery  
15 y. o. | 🇩🇪🇬🇧  
hw: 83 kg | cw: 73 kg | gw: 63 kg | lw: 55 kg  
height: 1.80 m

👏 MAJOR TRIGGER WARNING! 👏  
17 | UK 🇬🇧  
•Undiagnosed eating disorder, inpatient, anxiety•



## Germany's pro-eating disorder bubble

The median age of the pro-eating disorder bubble in Germany is 20 years old, and one quarter are underage.

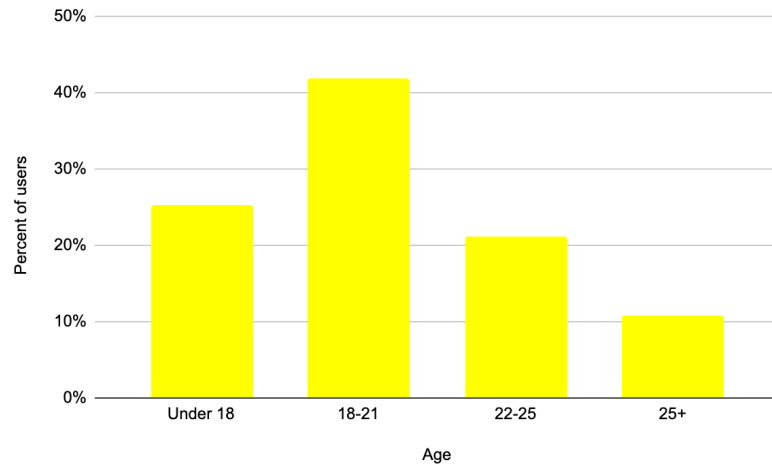


Figure 16: The self-declared ages of Instagram's pro-eating disorder bubble, Germany

14 y|o german gurl  
2 x inpatient  
eating disorder; depression; anxiety  
I want to be thin again 🦄

- 14 | they/them | germany
- magersucht | bulimie
- not pro | not recovering

- German girl
  - 16
  - Lonely
- Trigger warning
  - Ana

❤️ 16 years  
💛 height: 1,56  
💛 bmi: 20,0  
🌲 sw: 51  
🌳 cw: 49  
🌿 gw: 46  
🌿 gw: 41  
💧 ugw: 36

Figure 17: Example bios in Germany's pro-eating disorder bubble (anonymised)

## Many young people in the pro-eating disorder bubble describe wanting to recover, but they will still be within the algorithm's bubble

*"The algorithms are very smart in the sense that they latch onto things that people want to continue to engage with. And unfortunately, in the case of teen girls and things like self harm, they develop these feedback cycles where children are using Instagram to self-soothe, but then are exposed to more and more content that makes them hate themselves."*

- Frances Haugen Oct 4 2021, Testimony to US Senate Committee on Commerce, Science & Transportation

Many of the biographies of users in the bubble talk about wanting to or being in recovery, wanting to get 'better', to 'heal' or being aware of how unwell they were. However, these users are still in Instagram's algorithmically curated bubble. They will still be feeding content from other accounts in the bubble, including the seed accounts, that normalises, glamorises or promotes eating disorders.

*Figure 8: Example of biographies in the bubble that speak about wanting to recover or heal (anonymised). '1 report = 1 day fast' is the user's attempt to discourage people from reporting their account, by indicating that if their account is reported, they will not eat for one day.*

In recovery, 🧩 x 4, 13, anorexia is a disease, page for ranting, trigger warning

~I just wanna feel better about myself~16 years old~ cw 52 kilos~

Trying to get prettier got me pretty screwed me up

Female 💕  
17 💜

💖 fourteen

💖 ana relapse

💖 last attempted recovery: september 2021

💖 weight: 42 kilos

💖 height: 153 cm

⚡ trigger warning ⚡

ana screwed me up | relapse

16 (2 years into this)

1 report = 1 day fast

choose recovery 🍎

# Instagram's revenue from the pro-eating disorder bubble

Meta's policies outline that they will "remove content that promotes or encourages eating disorders" while allowing people to "share their own experiences and journeys around self-image and body acceptance".<sup>7</sup>

This is a difficult fine line for content moderators to police and allows much pro-eating disorder content and borderline content to be hosted on the platform. This might not be such a problem in itself if it wasn't for Instagram's algorithm; the algorithm goes on to promote the content that their moderation fails to detect to a huge amount of users worldwide.

Meta is inherently disincentivized from downgrading this content in their algorithm, and otherwise addressing the pro-eating disorder bubble that its algorithm has created. The scale and size of the community means it delivers an unhealthy profit. Any bubble that reaches 2% of its user base forms part of their business model, even bubbles that present significant health risks to users.

Each quarter, Meta releases a key metric called Average Revenue Per Person (ARPP) for Facebook. While Meta does not release an AARP for Instagram, Facebook's figures are the most comparable

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<sup>7</sup> Instagram 2021 'Help Centre'  
[https://help.instagram.com/567449254552862/?helpref=search&query=eating%20disorder&search\\_session\\_id=ecb7b2c02b7d32bb8c9d66bd2c203104&sr=2](https://help.instagram.com/567449254552862/?helpref=search&query=eating%20disorder&search_session_id=ecb7b2c02b7d32bb8c9d66bd2c203104&sr=2)

estimates available and potentially underestimate Instagram's ARPP. Instagram contributes over half of Meta's ad revenue (52.6%)<sup>8</sup>, despite having only around a third of the users of Facebook (Instagram had 1.074 billion monthly users worldwide in Dec 2021, while Facebook had 2.912 billion). Instagram potentially has a higher ARPP than Facebook, so using Facebook's ARPP to estimate for Instagram produces a conservative estimate.

Facebook's ARPP in Q4 2021 stood at \$11.57 per user globally, or \$60.57 per user in the US and Canada, \$19.68 per user in Europe and \$4.89 per user in the Asia Pacific region<sup>9</sup>.

Using these figures and the geographic regional affiliations in biographies allows us to estimate Meta's total revenue from the pro-eating disorder bubble: \$1.8 million per year. The revenue generated from all users following this bubble is \$227.9 million per year.

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<sup>8</sup> Sara Lebow 2021 'Instagram contributes over half of Facebook's US ad revenue'

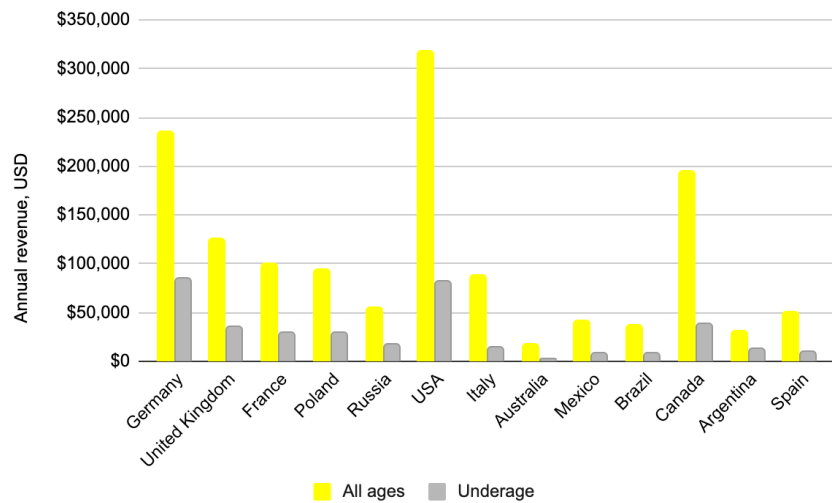
<https://www.emarketer.com/content/instagram-contributes-over-half-of-facebook-us-ad-revenues>

<sup>9</sup> Meta 2021 *Meta Earnings Presentation Q4 2021*

[https://s21.q4cdn.com/399680738/files/doc\\_financials/2021/q4/Q4-2021\\_Earnings-Presentation-Final.pdf](https://s21.q4cdn.com/399680738/files/doc_financials/2021/q4/Q4-2021_Earnings-Presentation-Final.pdf)

Meta's underage pro-eating disorder bubble is also profitable. They bring in \$0.5 million annual revenue alone, or \$62 million revenue from the people who follow those in the underage eating pro-disorder bubble. Again, all of these figures are conservative estimates and likely would be significantly higher if Meta released ARPP for Instagram users.

*Figure 12: Meta's annual revenue from the pro-eating disorder bubble by country*



# Conclusions

Instagram is profiting from the promotion of a harmful Pro-Eating Disorder Bubble. Children and teens are being fed accounts (and content) encouraging restrictive diets and extreme weight loss, and in turn, Instagram is regularly promoting and recommending children and teen's pro-eating disorder accounts (and content) to half a million people globally. This algorithm is clearly not functioning in young people's best interests.

This issue should not be considered an isolated incident nor an awful accident. Rather it is an example of how, without appropriate checks and balances, Meta systematically puts profit ahead of young people's safety and well-being. Meta's decisions around recommending eating disorder accounts and content may deliver small but steady profits to shareholders, but it has significant real life consequences for children and young people.

Documents revealed in the Facebook Files suggest Meta have been aware of this problem since at least 2019 and have failed to act. It is time that lawmakers and regulators around the world demand action is taken by setting guardrails on what social media platforms can and cannot do.

Introducing regulations that require platforms like Instagram to consider the safety and well-being of young people in the way they design and operate their systems and processes is essential. Requirements to only use minor's data in their best interests must be a first step.

We need regulation to ensure that children's best interests must be put at the heart of any digital platform operating in Australia.

The Enhancing Online Privacy Bill, which would in part do this, was not introduced into the Senate before the election was called and that's a real missed opportunity for kids. We need Labor and the Coalition to commit to passing legislation no matter who wins. These regulations are long overdue, and are demonstrably necessary to incentivise action against algorithms that promote eating disorder content.





# Appendix

## A note about the biographies represented in this report:

All biographies represented in this report have been anonymised. While these are not 'searchable' in search engines nor on Instagram itself, and are publicly available, they have still been anonymized in the following ways:

- Any names have been removed
- Emojis and other grammatical features have been altered
- The ordering of language has been changed
- In some instances, geographies have been 'shifted' where they would be identifiable
- Some start weights and goal weights have been altered

The meaning and intent of each biography has been maintained.

## Methods used in this report:

1. Data collection
2. Data mining
3. Natural language processing
4. Statistical analysis

## Timeframe of research collection:

13 December 2021 – 14 January 2022

## Approach:

*Step 1 – Selecting seed accounts.* This involved the manual selection of Instagram profiles that post content normalising body-image problems or promoting eating disorders and extreme weight loss. Accounts were selected where an account was public, had over 1000 followers and two of three criteria were met:

- They posted visual content that celebrated "thinspiration" or "bonespiration", such as positive imagery of extremely underweight people or other eating disorders memes;
- They had an underweight body mass index as indicated in their biography. Often BMI was mentioned in bio, or a user's height and current and goal weight were stated in bio allowing their BMI to be calculated;
- Their biography, username, or description of the content or comments contained Eating Disorder community-relevant vocabulary, such as ed (eating disorder), tw(trigger warning), ana (anorexia), mia (bulimia) etc.

No accounts that appeared to be 'recovery journals' or health awareness accounts were included in the seed accounts.

*Step 2 – Data collection about followers of seed accounts.* The 153 seed accounts had a total of almost 2.3 million followers (2,286,849 in total as an arithmetic sum of followers). However, many of these 2.3 million followers were following more than one of these seed accounts.

Cross referencing publicly available information from account biographies, such as usernames, suggested that 69.96% of these 2.3 million followers were unique users. This 69.96% calculation is used throughout the research as an estimate of the proportion of unique users within a pool of followers.

Of these 2.3 million followers, an estimated 1.6 million unique users follow the 153 seed accounts (1,599,880 in total).

*Step 3 – Identifying those within Instagram’s pro-eating disorder bubble.* Among these 1.6 million users, we identified those following three or more ‘seed accounts’ as within Instagram’s pro-eating disorder bubble. In total 88,655 users were estimated to be within the bubble.

*Step 4 – Analysis of the available data about the accounts within the bubble.* We collected and analysed the following data points about the 88,655 user’s accounts; username; biography; followers count; private or public status; language.

This analysis included creating estimates of:

- The age of those within the bubble. Using natural language processing searching for age by specific templates, combined with human coding, we were able to identify that 4,115 users self-identify their ages in their account biographies. These self-declared ages were used to estimate the age range of users. Age templates were multilingual, included numbers as well as words, emojis and different terms and are available upon request.

- The geography of those within the bubble. Using natural language processing searching for age by specific templates, combined with human coding, we were able to identify that 3,719 users had identified a regional affiliation in their biography. These regional affiliations were used to estimate geographies. Regional affiliation templates were multilingual, included emoji flags as well as words and different terms and are available upon request.
- Follower counts of those following users within the bubble. The arithmetic sum of the followers of these 88,655 users is 28,158,398. The estimate of unique users with a follower count is 69.96%. This means that around 20 million (19,699,615) unique accounts follow 88,655 profiles assumed to be in the ED community on Instagram.

Creating estimates of Instagram’s revenue from this bubble used publicly available information about Facebook’s Average Revenue Per Person (ARPP) from Q4 2021<sup>10</sup>. Facebook’s AARP was applied to the geographic regional affiliations in biographies to allow an estimate of Meta’s total revenue from users within the pro-eating disorder bubble.

As geographic information was not analysed about the followers of those within the bubble, the global average ARPP was used to generate the total estimate. This global figure includes all users for whom content from within the bubble forms *part* of their experience on the platforms. This research did not attempt to explore how much of their content came from within the bubble, nor the centrality of ‘the bubble’ to any user’s experience on the platform. Rather, this figure attempts to highlight the sum total of Meta’s revenue that the pro-eating disorder bubble is a part of.

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<sup>10</sup> Meta 2021 *Meta Earnings Presentation Q4 2021*  
[https://s21.q4cdn.com/399680738/files/doc\\_financials/2021/q4/Q4-2021-Earnings-Presentation-Final.pdf](https://s21.q4cdn.com/399680738/files/doc_financials/2021/q4/Q4-2021-Earnings-Presentation-Final.pdf)



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