

Feeding tubes and transition to ENFit™: creating science around infinite user variables

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Some of you raised concerns, we listened.....



Do ENFit based feeding tubes:

- a. Have slower flows compared to legacy devices?
- b. Clog more frequently than legacy devices?
- c. Require more force than legacy devices?

Our project was performed in two phases

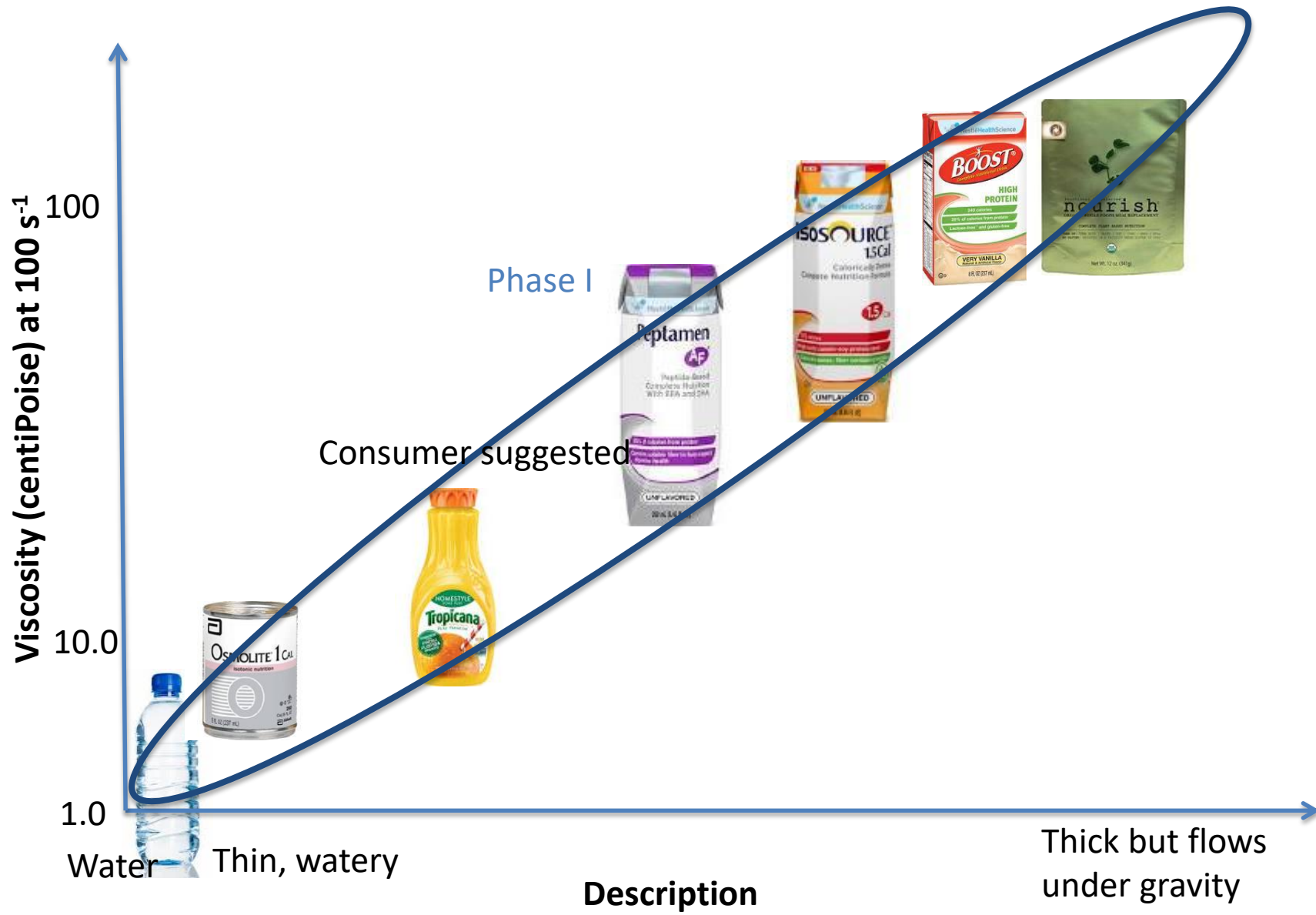


- Phase I – commercial diets representing > 70 % of tube feeders
- Phase II – home based blenderized diets representing remaining
tube feeders

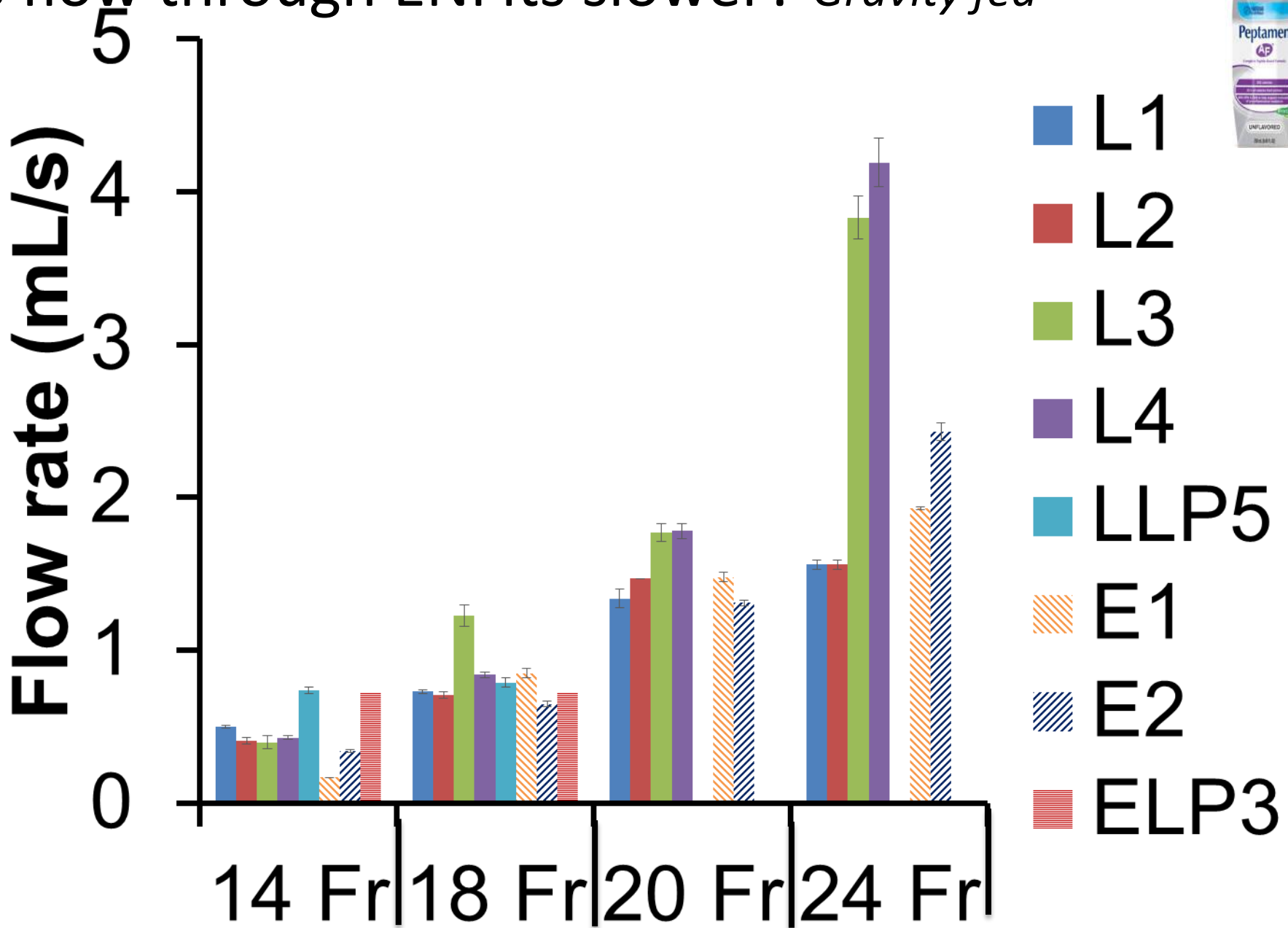
Phase I – Commercial diets

- 8 brands of devices
 - 4 dangling legacy brands
 - 2 dangling ENFit brands
 - 1 low profile legacy brand
 - 1 low profile ENFit brand
- 4 sizes
- 7 diets

Phase I - Commercial diets we looked at

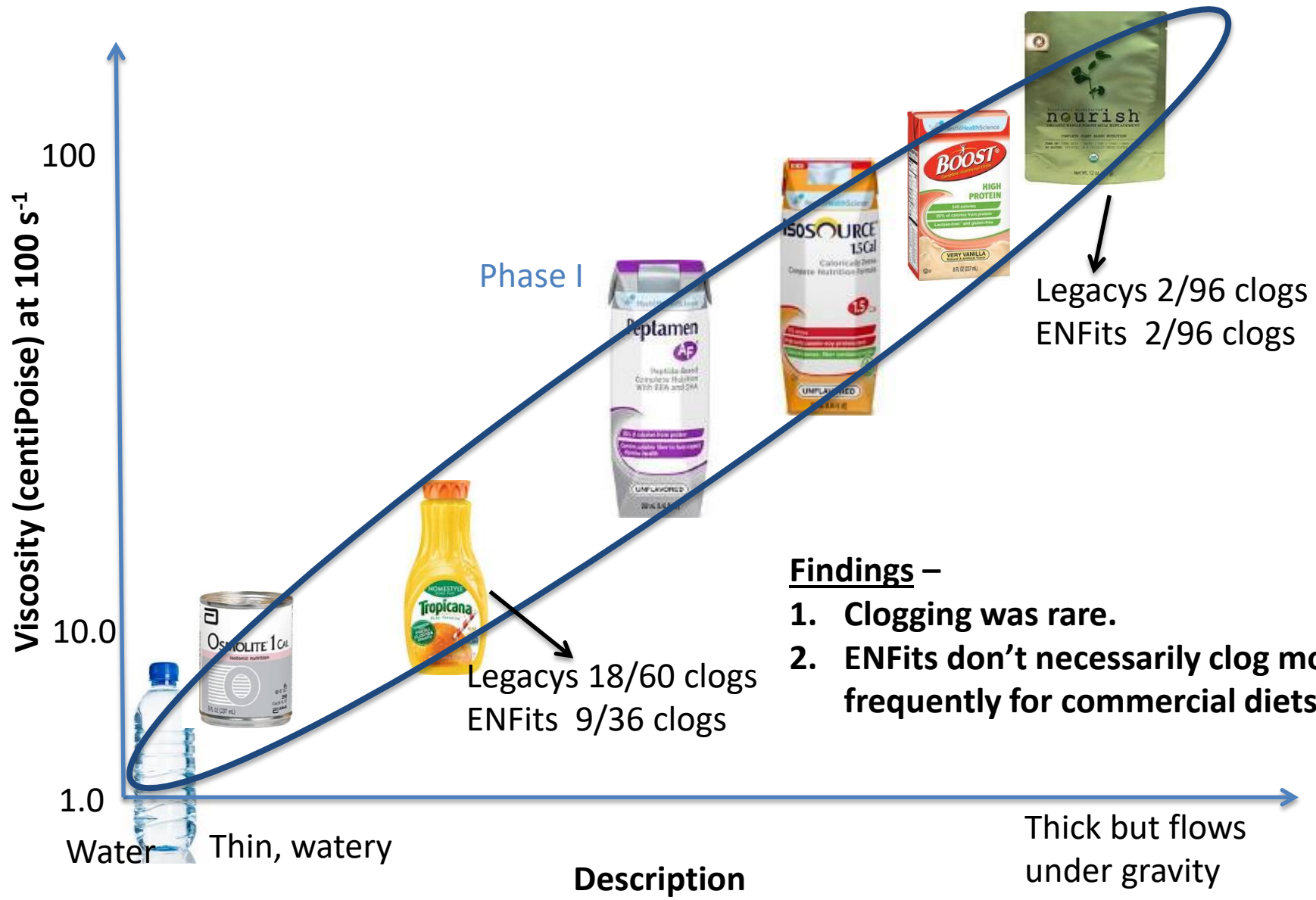


Is flow through ENFits slower? *Gravity fed*



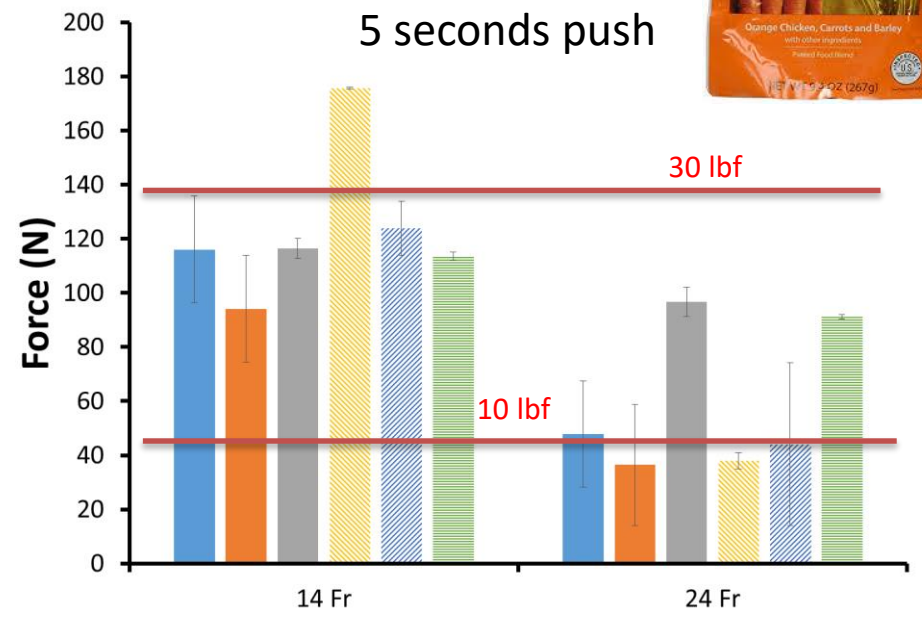
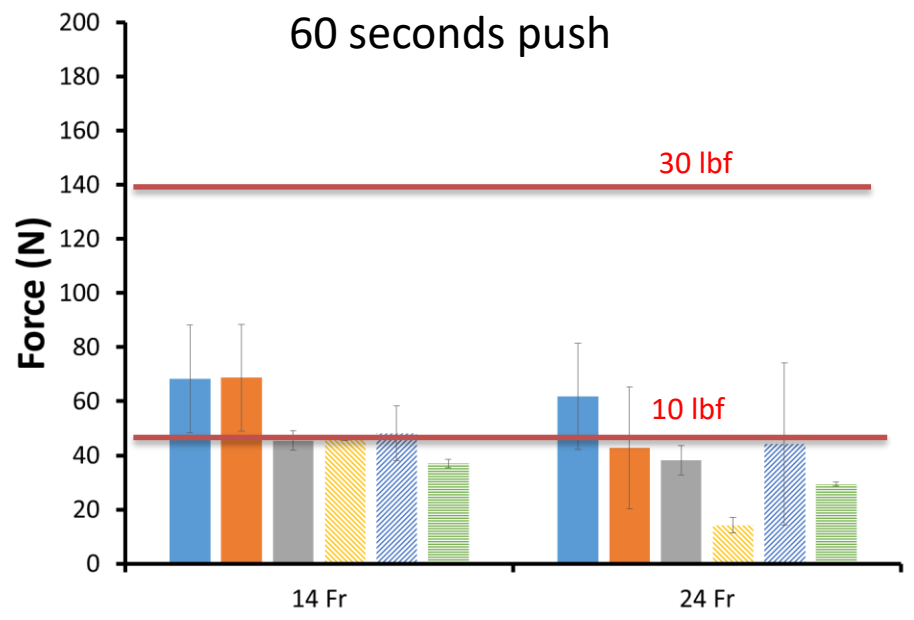
Findings: Large diversity in data, similar flow rates in most sizes, two exceptions. ⁷

Do ENFit clogs more frequently?



Is more force required for ENFit devices?

Real food blend – thick commercial blenderized diet



- L1
- L4
- LLP5
- E1
- E2
- ELP3

Finding: In general ENFit devices mostly required less or equal force compared to legacy devices.



Major takeaways for commercial diets

Do ENFit based devices:

a. Have slower flows compared to all legacy-s?

Generally 20 minute feed will take 14 – 30 minutes.

- i. For a subgroup of 20, 24 Fr dangling tube users 20 minute feed may take 31 – 39 minutes.
- ii. For a subgroup of 14 Fr dangling tube users 20 minute feed may take 40 – 80 minutes.

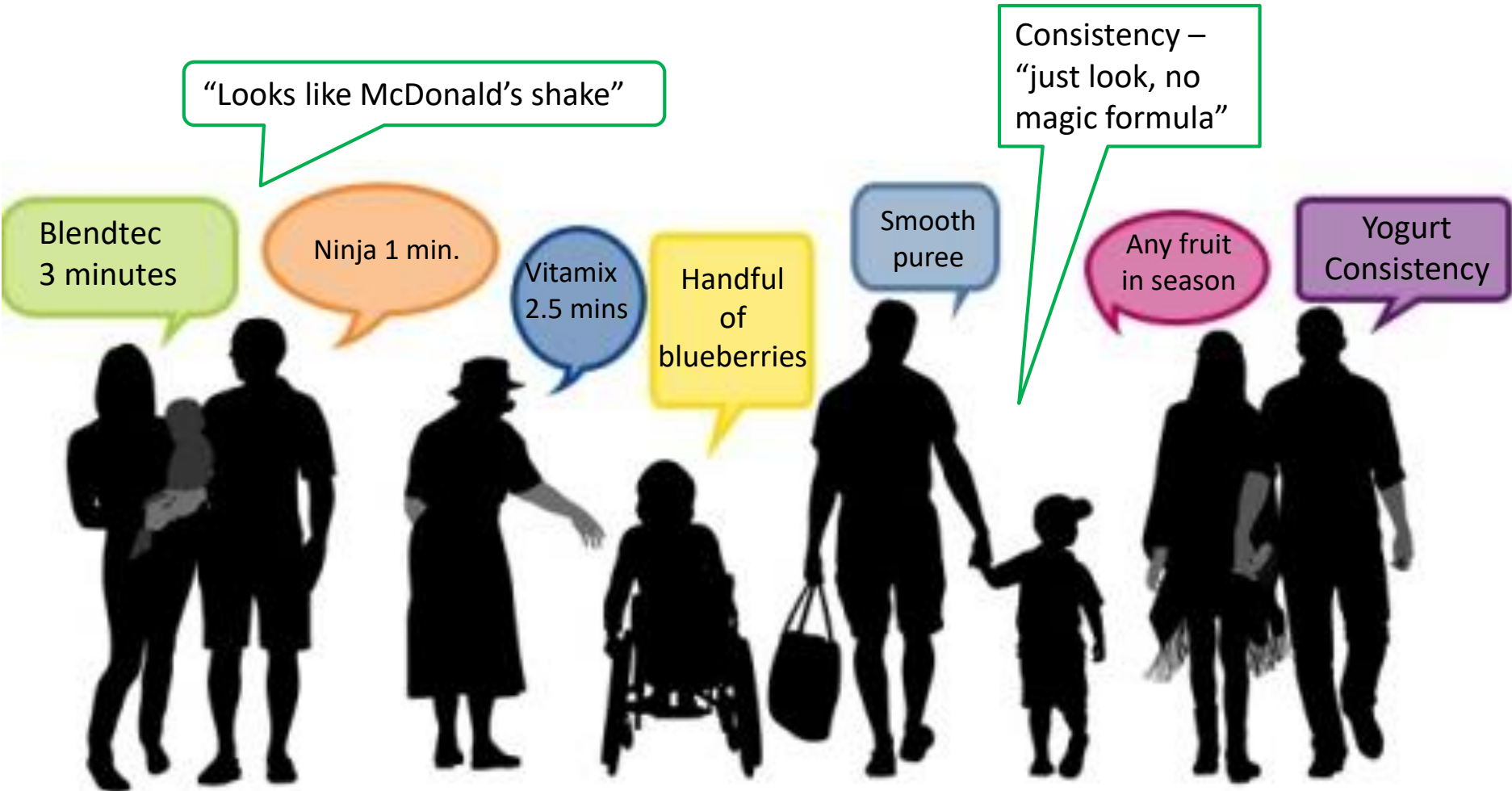
b. Clog more frequently compared to all legacy-s?

Clogging was similar in Legacy and ENFit.

c. Require more force

Most often, equal or less force.

Phase II – Home based blenderized diets

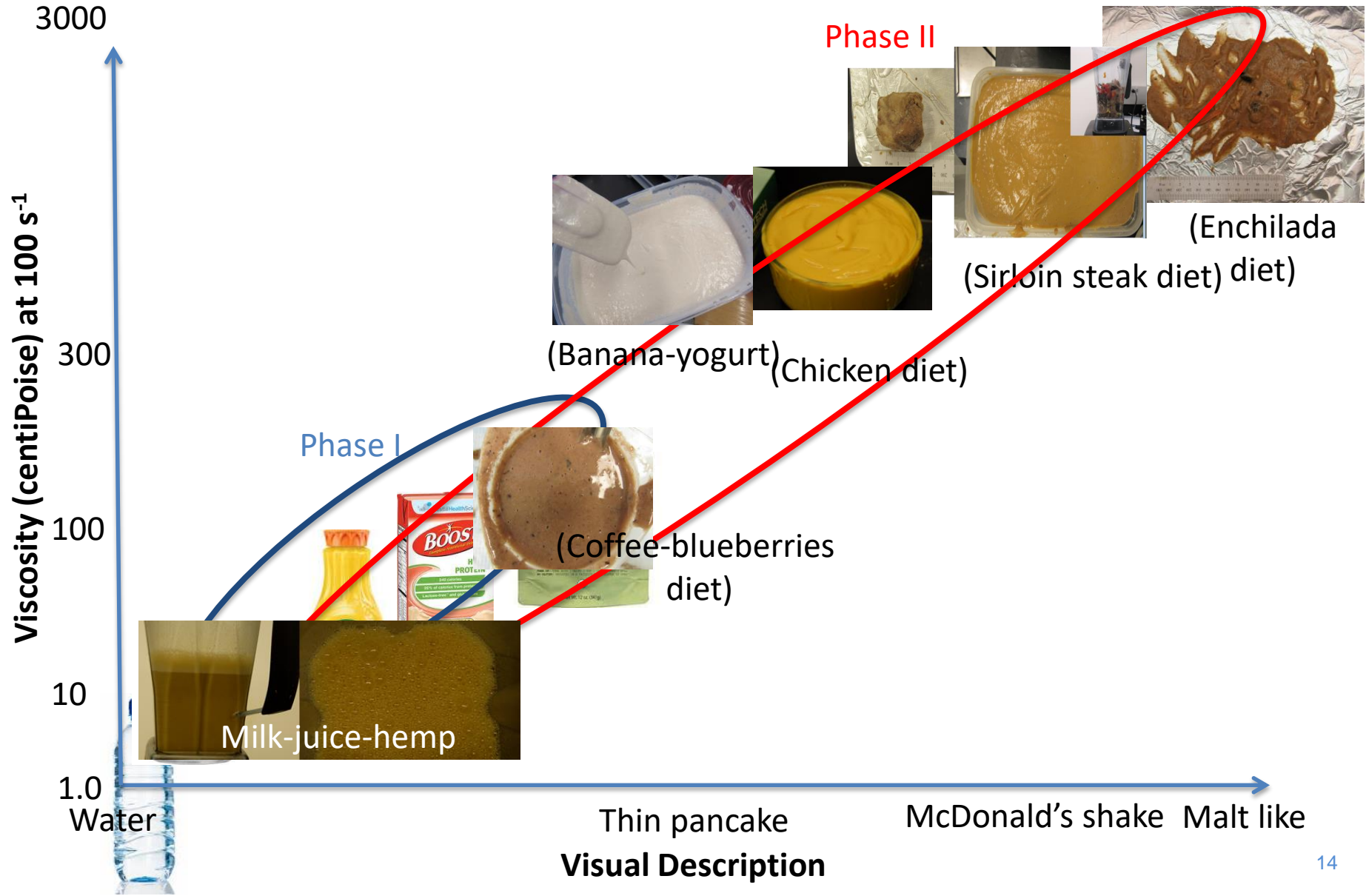




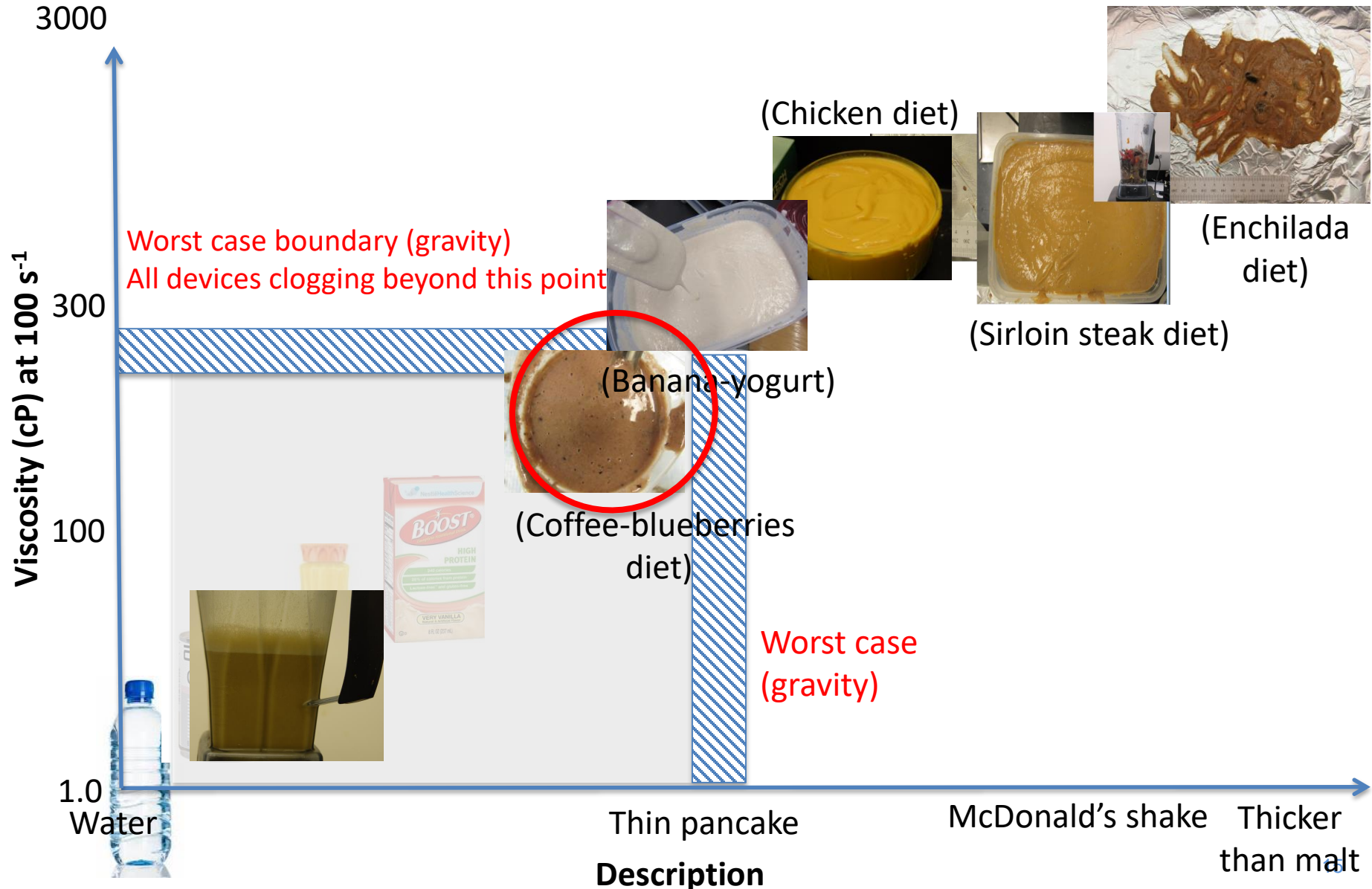
Phase II – Home based blenderized diets

- Diets considered
 - 1 adult gravity feed
 - 1 pediatric gravity feed
 - 3 adult syringe push feed
 - 1 pediatric syringe push feed
- Bracketed study (not all devices were considered)

Phase II – Home based diets investigated



Home based diet: worst case for gravity



Worst case diet testing for gravity feed - Coffee-strawberry-blueberry-oatmeal-walnut-honey - chocolate



Ninja, 1 minute blending
Thin pancake batter consistency

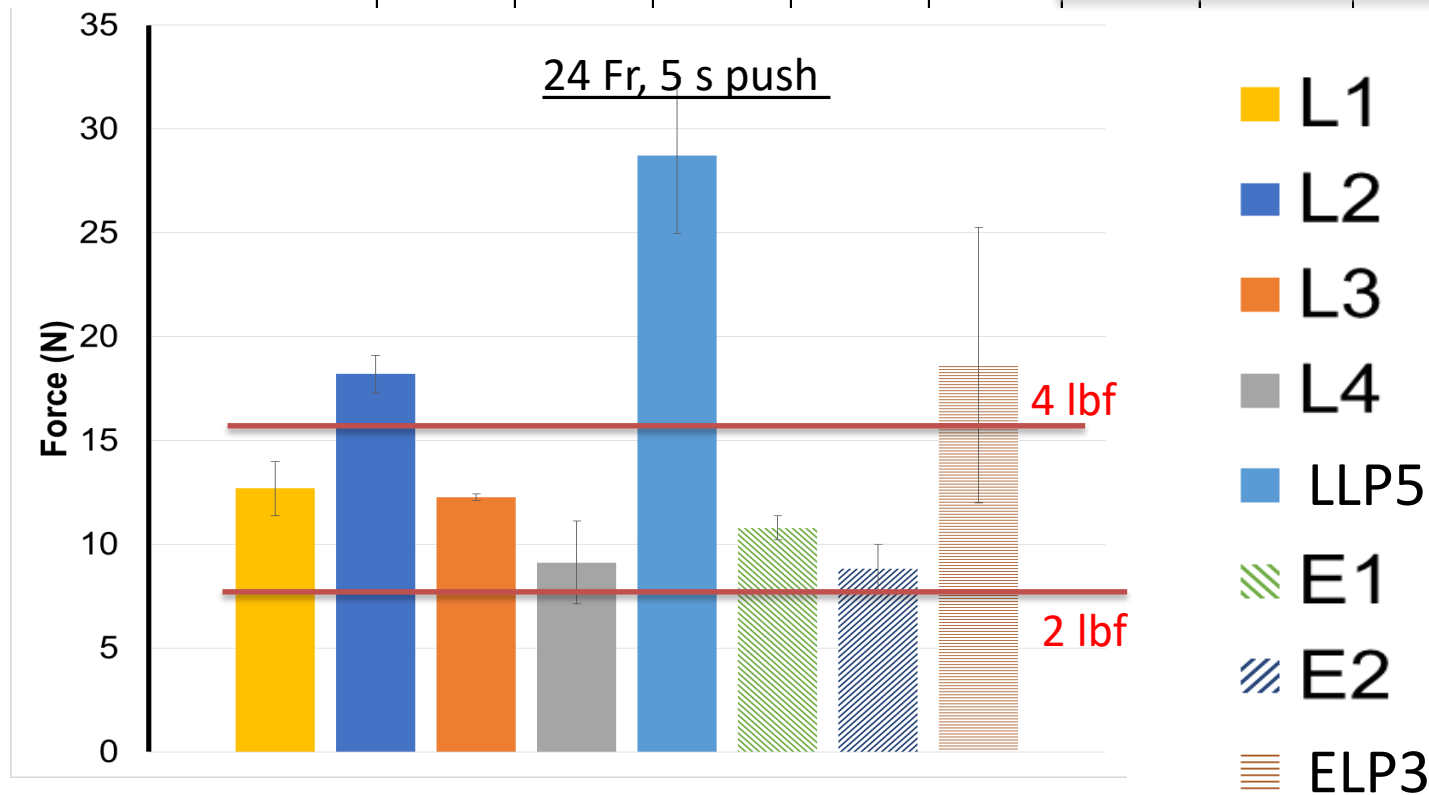
	Legacy-s (60 mL volume)					ENFit-s (60 mL volume)		
	L1	L2	L3	L4	LLP5	E1	E2	ELP3
Ninja 1 minute 18 Fr	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3
Ninja 1 minute 20 Fr	Clog 3/3	Clog 3/3	5 min.	5 min.	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3
Ninja 1 minute 24 Fr	Clog 3/3	Clog 3/3	< 1 min.	< 1 min.	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3
Ninja 3 minutes 24 Fr	Clog 3/3	Clog 3/3	< 1 min.	< 1 min.	Clog 3/3	Clog 5/6	Clog 4/6	Clog 3/3
Ninja 5 minutes 24 Fr	Clog 3/3	Clog 3/3	1 min.	< 1 min.	Clog 6/6	Clog 5/6	Clog 4/6	Clog 6/6
Blendtec 2 minutes smoothie 24 Fr	1 min	1 min	1 min	< 1 min.	Clog 4/6	>1.5 min	<1.5 min	Clog 3/6
Vitamix 2 minutes smoothie 24 Fr	>1.5 min	1.5 min	1 min	< 1 min.	2 min.	2 min	> 1.5 min	1.5 - 3 min
Blendtec 3 minutes smoothie 24 Fr	> 1.5 min	2 min.	< 1 min.	< 1 min.	Clog 1/3	1.5 min	1.5 min	Clog 1/3
Vitamix 3 minutes smoothie 24 Fr	1 min	1.5 min	< 1min.	< 1 min.	1 min	1.5 min	1.5 min	1.5 min

- Clogging occurs in both ENFit and Legacy devices
- Better blenders can eliminate clogging
- Legacy and ENFit low profiles are most prone to clogging

An additional option for this diet – pushing the same diet with force



	Legacy-s (60 mL volume)					ENFit-s (60 mL volume)		
	L1	L2	L3	L4	LLP5	E1	E2	ELP3
Ninja 1 minute 24 Fr	Clog 3/3	Clog 3/3	< 1 min.	< 1 min.	Clog 3/3	Clog 3/3	Clog 3/3	Clog 3/3



Findings:

- Clogging can be removed by pushing the diet
- Force for Legacy and ENFit was similar



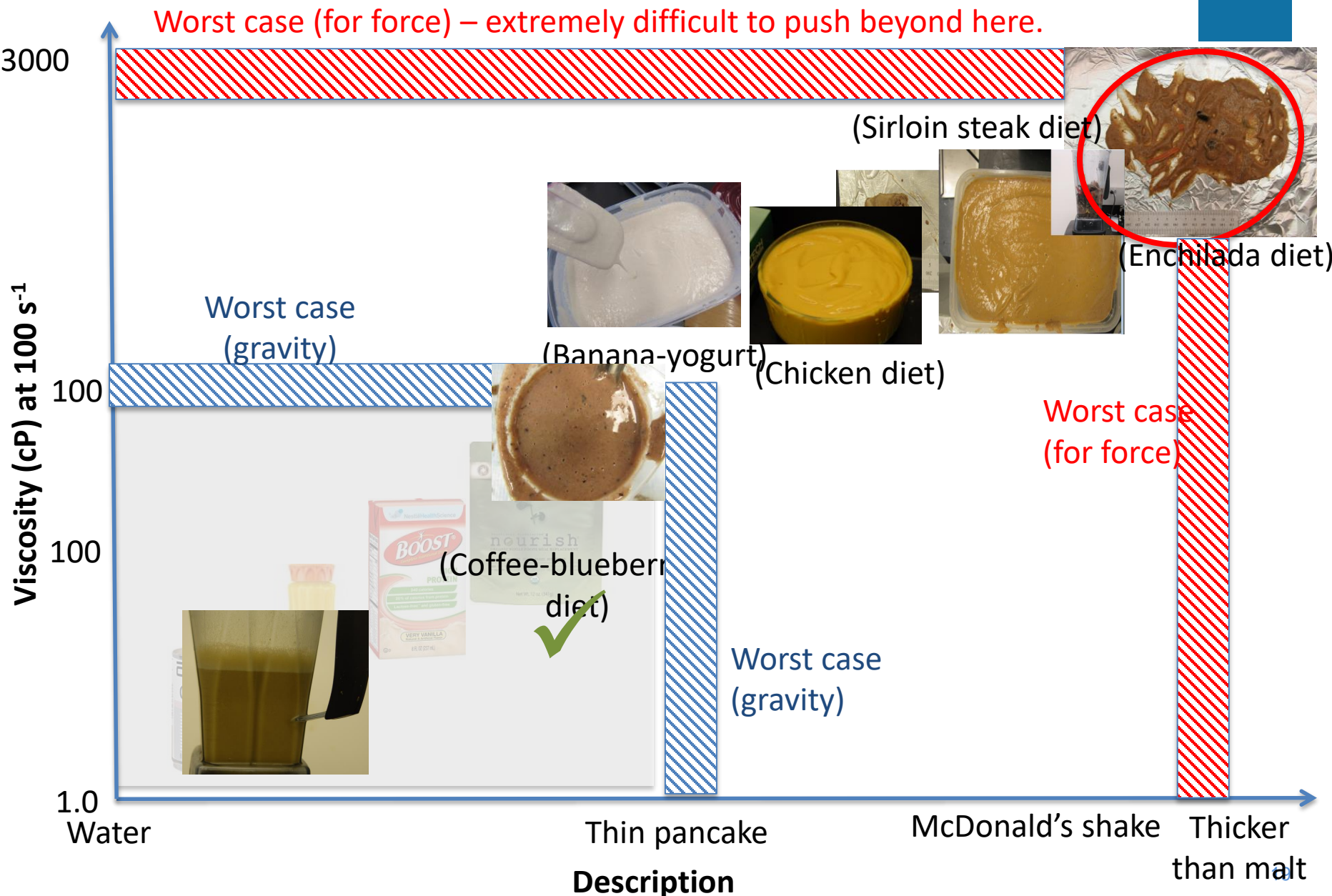
If some gravity fed diets clog

Option 1 – If particulates cause clogging, then increasing blending time with existing blender.

Option 2 – Or, pushing with some force

Option 3 – Or, using higher end blenders and increased blending time.

Consumer diets : worst case for force

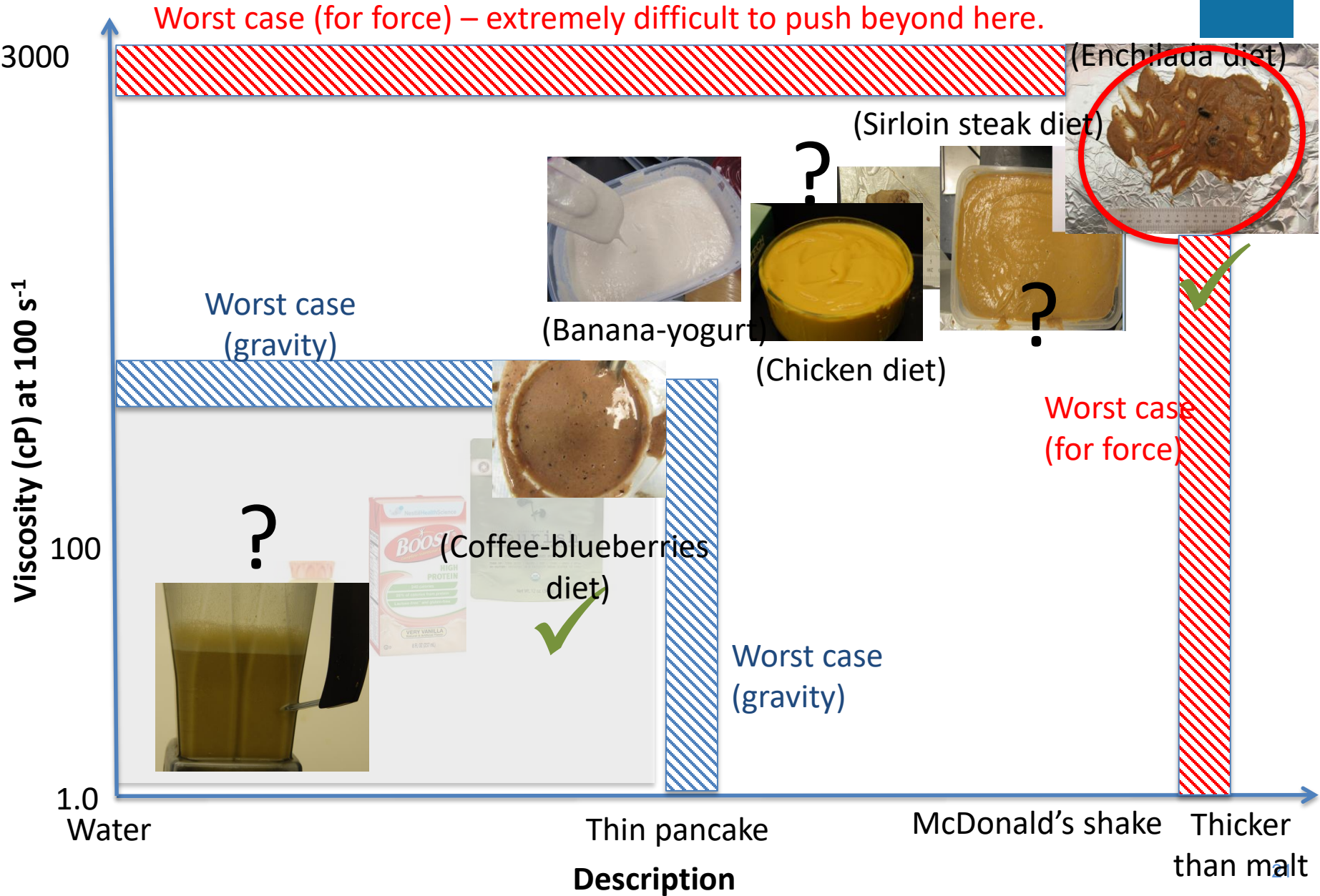


Enchilada-blackbeans-Mexican rice diet



Findings - ENFit devices, in general, did not require more force than legacy-s.

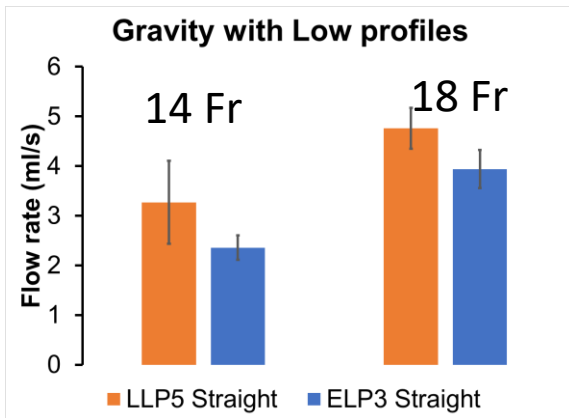
Consumer diets : worst case for gravity and force



Consumer 2 via FTAF
 Enriched Milk, Protein powder, Gerber foods etc.



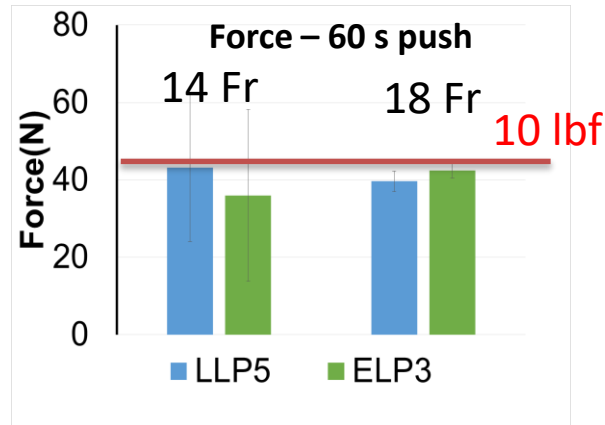
- 4 yr old
- “Gives a consistency thin enough to give via syringe gravity”*



Consumer 5 via FTAF
 Chicken, garlic marinated tomatoes, sweet potatoes



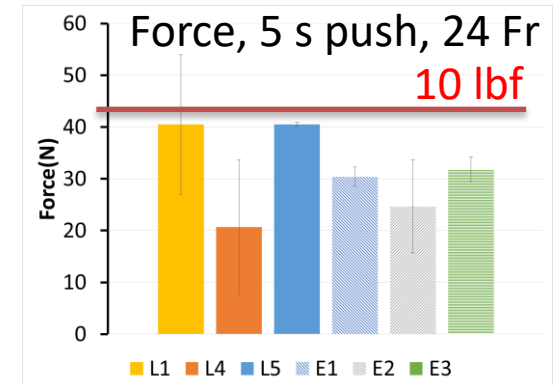
- “Yogurt like consistency.”*
- “Recipe works great with ENFit syringes and extensions”*
- Low profile ENFit user.



Consumer 6 via Oley
 Sirloin, craisins, pecan etc.

“Opening the container lip it should look [like] smooth puree. Should pour out about like a McDonalds shake and pours in a smooth flow not as thick as malt which pours in globs.”

- Vitamix 1.5 minutes, 5 s push
- 24 Fr, dangling



Findings: ENFit force equal or less, flow rates findings consistent with commercial diets.



Do ENFit based devices:

a. Have slower flows compared to all legacy-s under gravity?

Findings with home-based diets is consistent with commercial diets. Most 20 minute feeds may take 14 – 30 minutes (two exceptions). For a 20, 24 Fr subgroup may take 31 – 39 minutes. For a 14 Fr subgroup may take 40 – 80 minutes.

b. Clog more frequently compared to all legacy-s?

- Occurred in both ENFit and Legacy.
- High end blenders can address clogging.
- Dangling ENFits were found to clog less often than low profile legacy-s and low profile ENFits.

c. Require more force?

Most often ENFit devices require equal or less force.



Thank you