



Er frárennsli gátt fyrir örrusl í
hafið?

Hrönn Jörundsdóttir

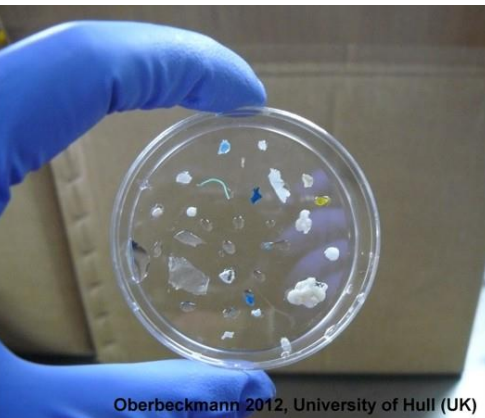


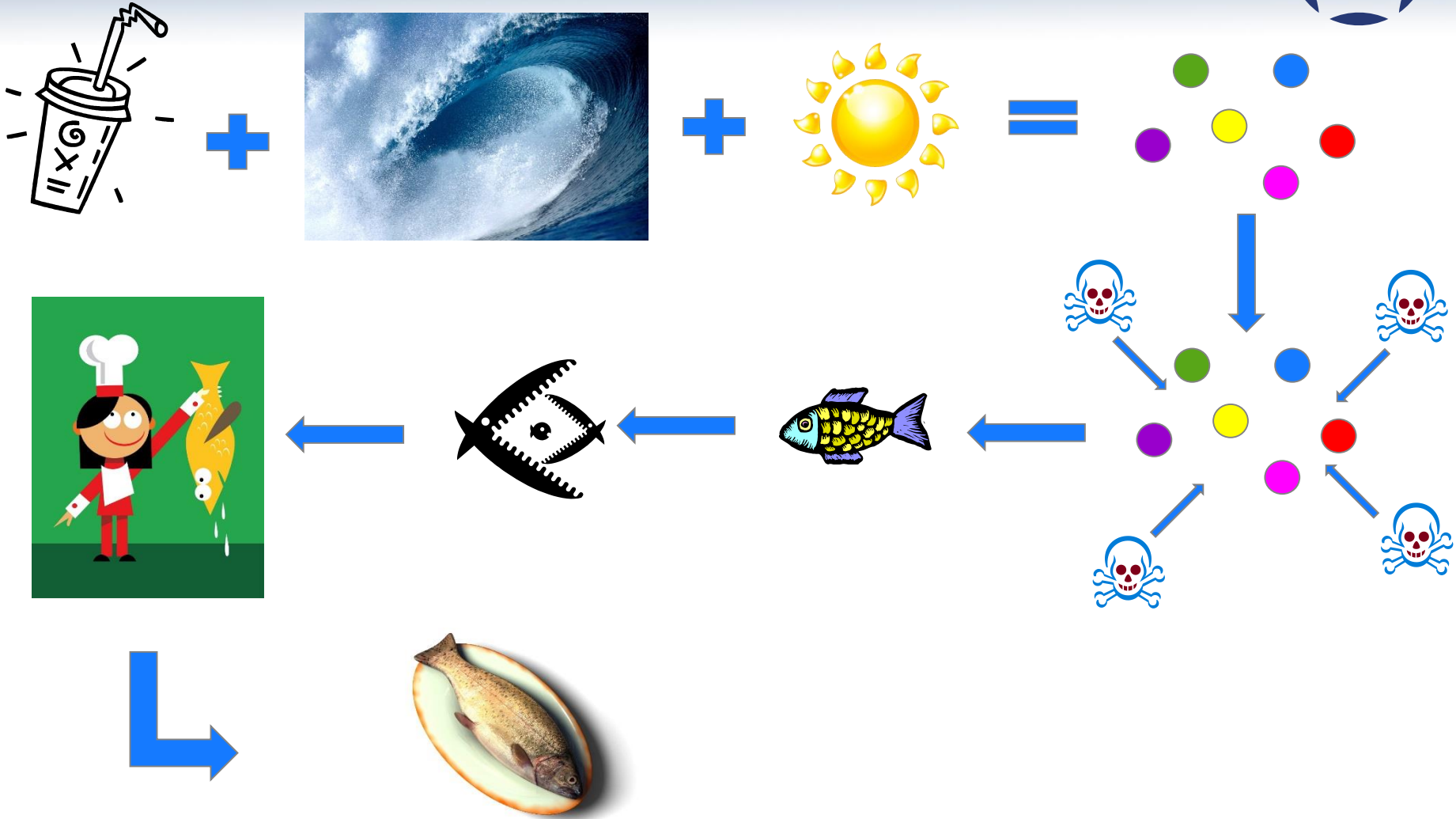
- **Svíþjóð**
 - **IVL, Swedish Environmental Research Institute**
- **Finland**
 - **SYKE (Finnish Environment Institute)**
 - **Aalto University**
- **Ísland**
 - **Matis, Icelandic Food and Biotech R&D**

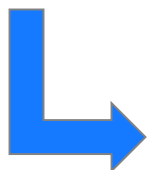
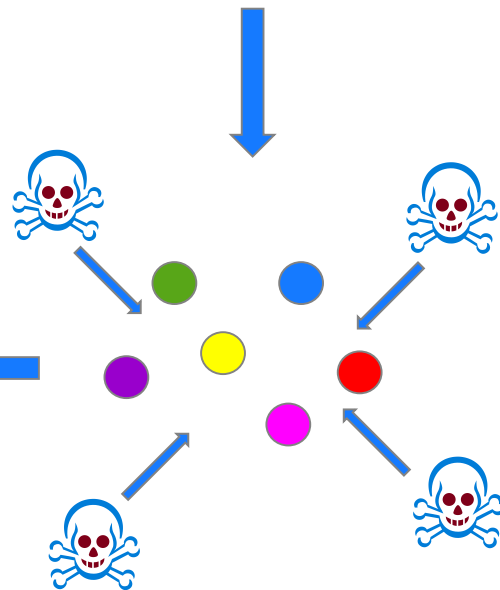
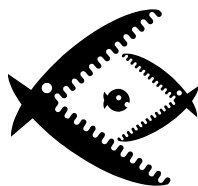
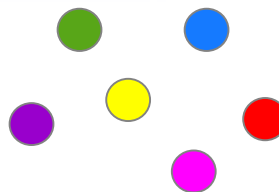


Við notum hugtakið *Öragnir*

- Á ensku *microlitter*
- Agnir/brot/trefjar <5mm size (<1mm),
- Örplast myndast vegna niðurbrots stærri plasthluta, einnig til sem örplast frá upphafi
- Ógna lífríki hafsins





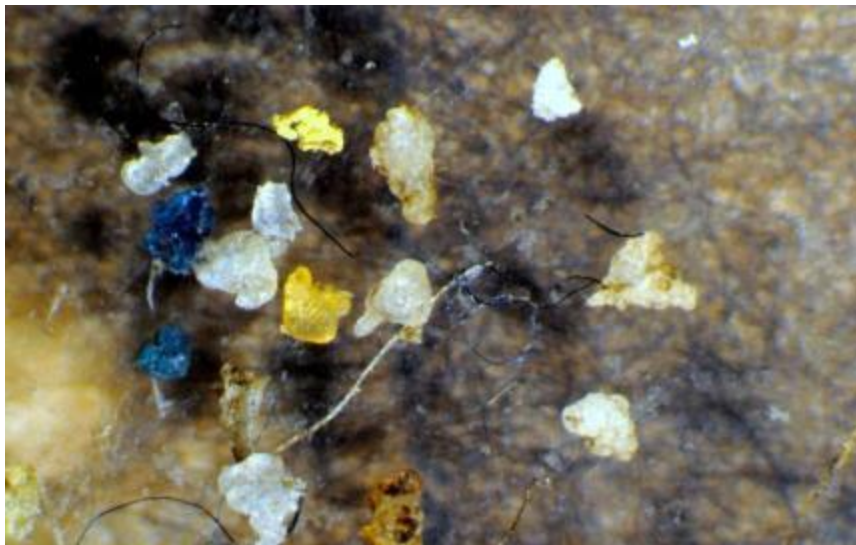
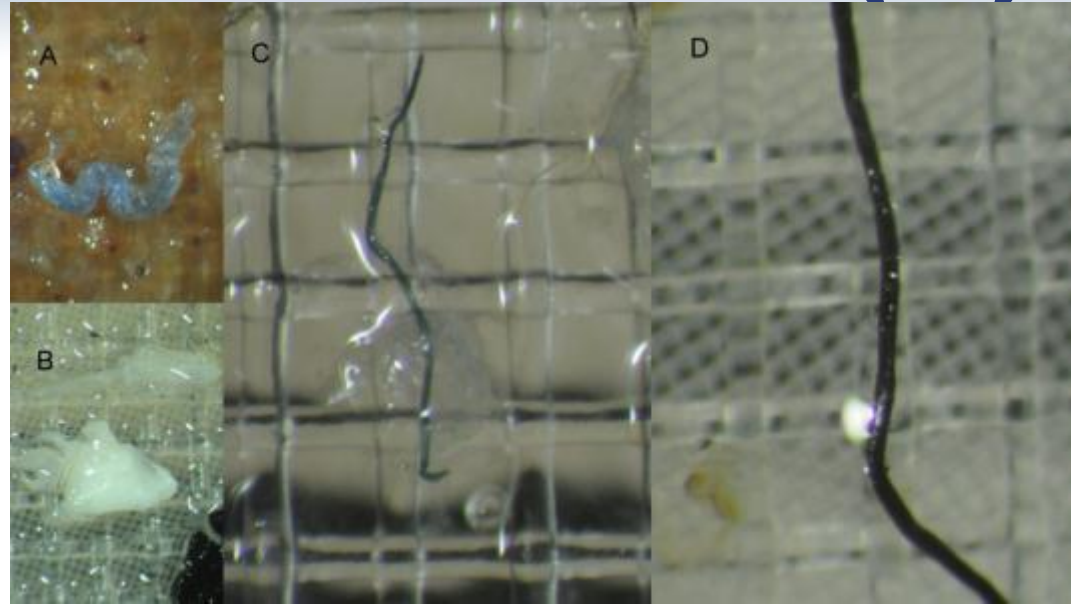




Rannsaka hvort skólphreinsistöðvar séu gátt fyrir öragnir út í umhverfið

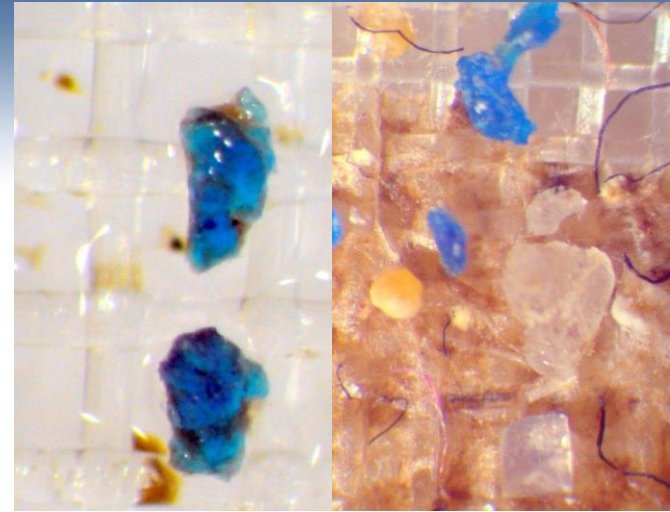
Meta magn öragna í viðtakanum (hafinu) við útfallsrör og safna upplýsingum svo hægt sé að meta áhrif öragna á lífverur

Dæmi um örplast í skólpsýnum

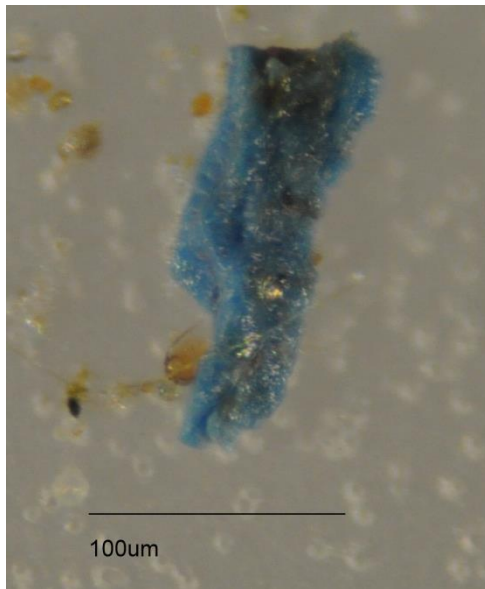




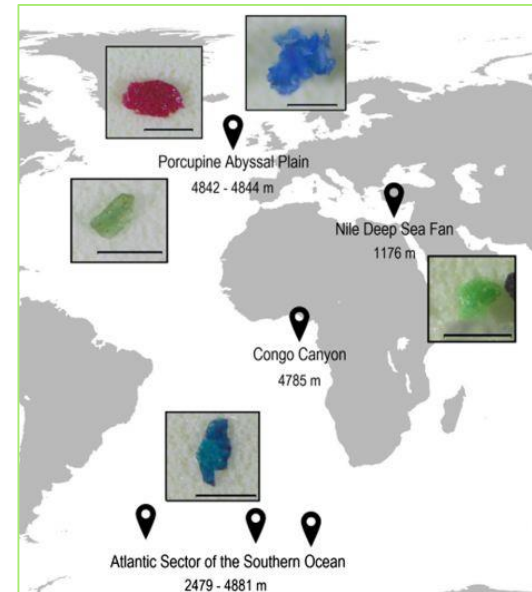
Fóðrun skólplagna



Agnir í frárennsli. *Magnusson 2014*



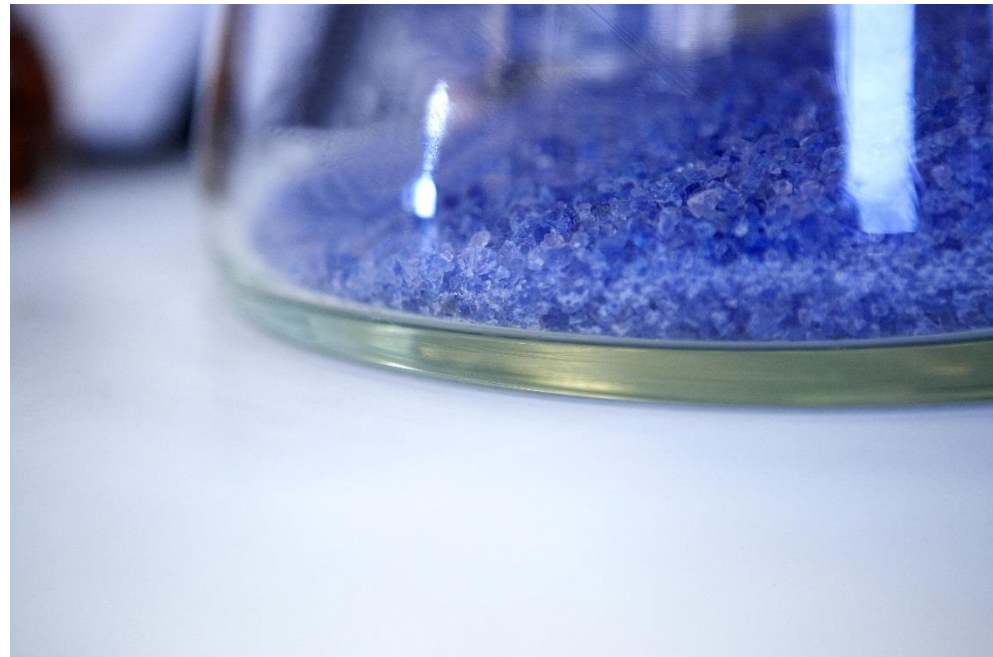
Agnir í hafi (strandsvæði). *Norén 2014*



Djúpsjárvar set. *Van Cauwenberge 2007*

Ísland:

- **Gróf síun á skólpi á Íslandi – takmörkuð hreinsun**
- **Enginn munur á fjölda öragna í inn og útflæði í íslenskum sýnum**





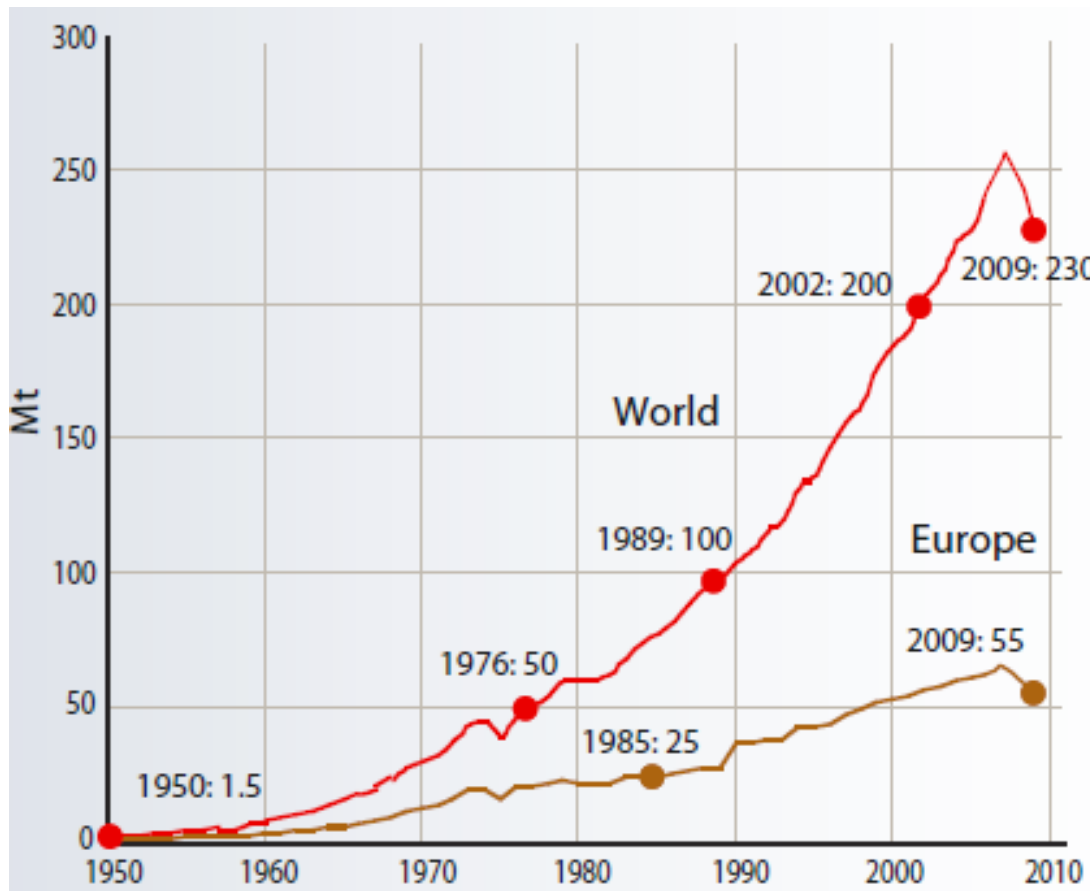
Finland og Svíþjóð

- **Finland og Svíþjóð með meiri hreinsun – disk fíltar**
- **99% öragna setjast í seyrana**
- **Öragnir sleppa samt út frá hreinsistöðvum í Finlandi og Svíþjóð, allt að **790.000 agnir/klst****
- **Polypropylene algengast tegundin sem fannst**

Hvernig getum við fjarlæggt öragnir úr umhverfinu og/eða matvælum?



Plastframleiðsla í heiminum



40% eru pakkningar

Top 10 hlutir sem finnast sem sjávarrusl

1989-2007 'Top ten' marine debris items – global ICC totals		
Debris items	Number of items	Percent of total
Cigarettes/cigarette filters	25,407,457	24.6
Bags (paper & plastic)	9,711,238	9.4
Caps/lids	9,398,977	9.1
Food wrappers/containers	9,191,575	8.9
Cups/plates/forks/knives/spoons	7,426,964	7.2
Beverage bottles (plastic) <2 litres	5,684,718	5.5
Beverage bottles (glass)	4,991,860	4.8
Beverage cans	4,796,554	4.6
Straws, stirrers	4,508,085	4.4
Rope	2,215,329	2.1
Total debris items	103,247,609	80.7

Source: Compiled from annual ICC data reports, Center for Marine Conservation/Ocean Conservancy (1989-2007).

Ref: UNEP 2009, http://www.unep.org/pdf/unep_marine_litter-a_global_challenge.pdf

Plast inniheldur oft skaðleg efni

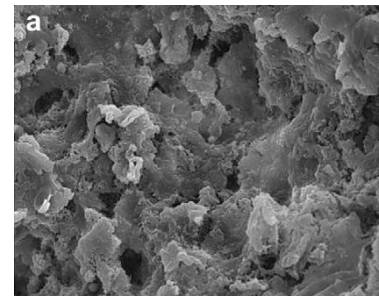
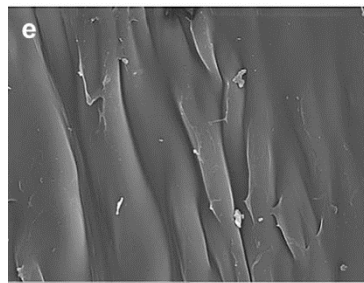
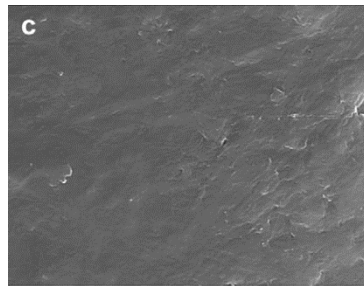
- t.d. mýkingarefni eins og Pthalates og Bisphenol A (BPA)

POP geta bundist plasti

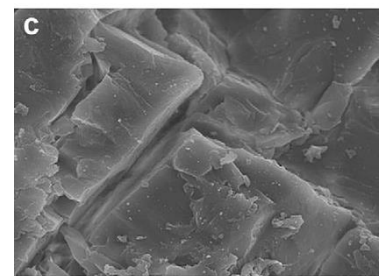
- PCBs, DDT, o.s.frv.

Yfirborð og veðrun

Virgin pellet surface

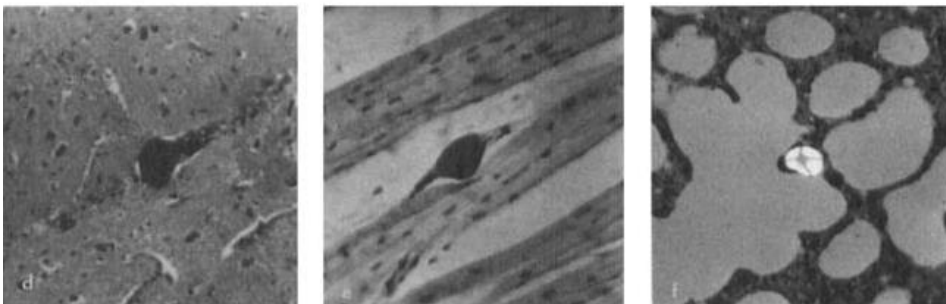
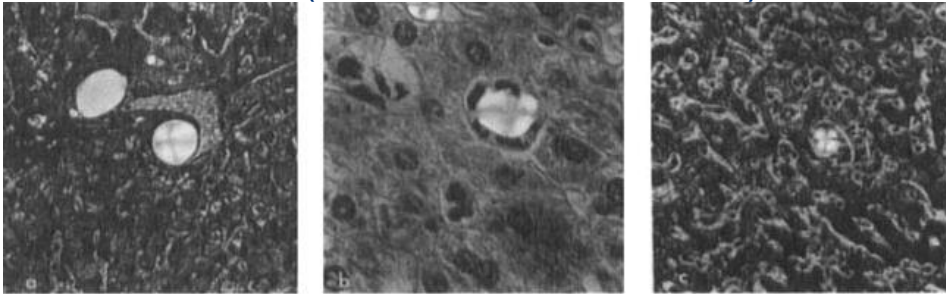


Weathered pellet surface



Upptaka örplasts í rottum

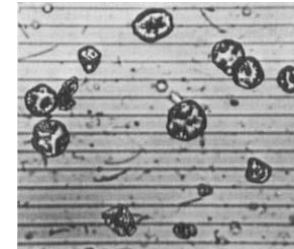
Liver (3 min, 30 min, 300 min)



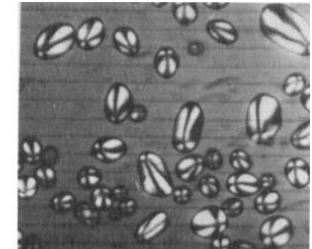
Heili

Vöðvi

Lungu



PVC



Potato Starch

Sterkju agnir í mönnum:

- Þvag
- Lungnablöðrur
- Kviðarholi
- Heila og mænuvökva
- Mjólk
- *Kemst yfir fylgjuna!*



Takk fyrir áheyrnina

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