

## BI 121 Lecture 9

We survived the exam! Happy Halloween!!  
Remember nutrient p & have safe fun!



- I. Announcements:** No lab today! Break for exam week!  
Next R Blood Chemistry. Thanks sincerely for helping us optimize safety by reading  $\geq 2x$  Lab 5, LM pp 5-1 to 5-6.
- II. Blood Form & Function** LS ch 11, DC Module 5 pp 35-9
  - A. Formed vs Nonformed/cells vs plasma** fig+tab 11-1  
Cell origin - bone marrow. What's in plasma? p 316
  - B. Red blood cells/erythrocytes: O<sub>2</sub> carrying** pp 317-8  
Normal flexible vs fragile sickle cell fig 11-5 p 320
  - C. White blood cells/leukocytes: defense/immunity**  
differential + general functions pp 326-30 fig 11-1
  - D. Platelets/thrombocytes: clotting** pp 321-2 fig 11-6
- III. Blood Chemistry Lab: Basics** LM + LS ch 11 & 17
  - A. What's blood typing? ABo System** ch 11 LS pp 341- 4  
Rhesus factor? Erythroblastosis fetalis? LS p 343
  - B. Physiology in the News: Eat right for your type?**
  - C. What's blood glucose? Diabetes?** LS ch 17 pp 560- 73
  - D. Questions about blood chem lab?**

## **IV. Exam Comments + Return**

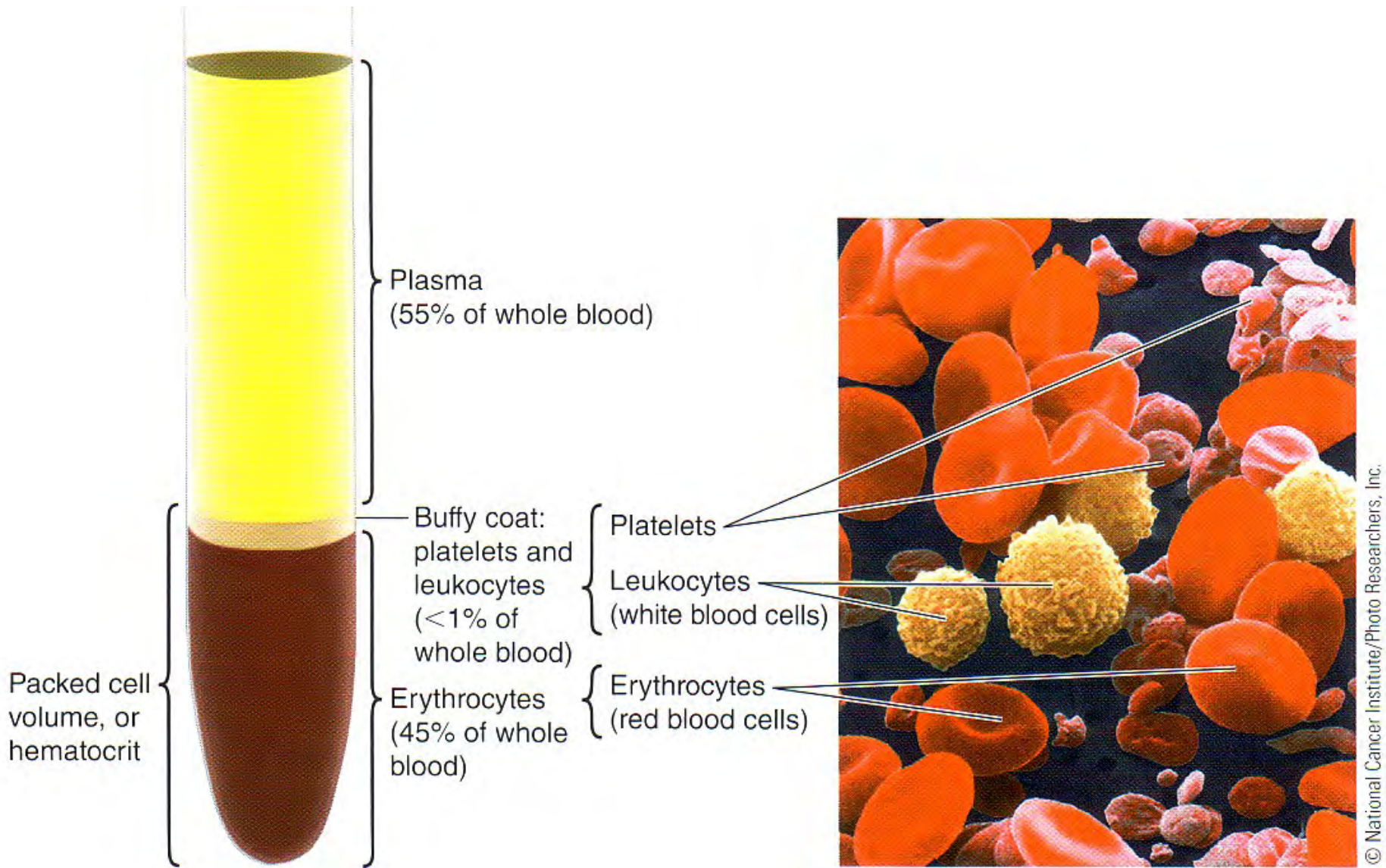
Ghost, marshmallow  
or white blood cell?

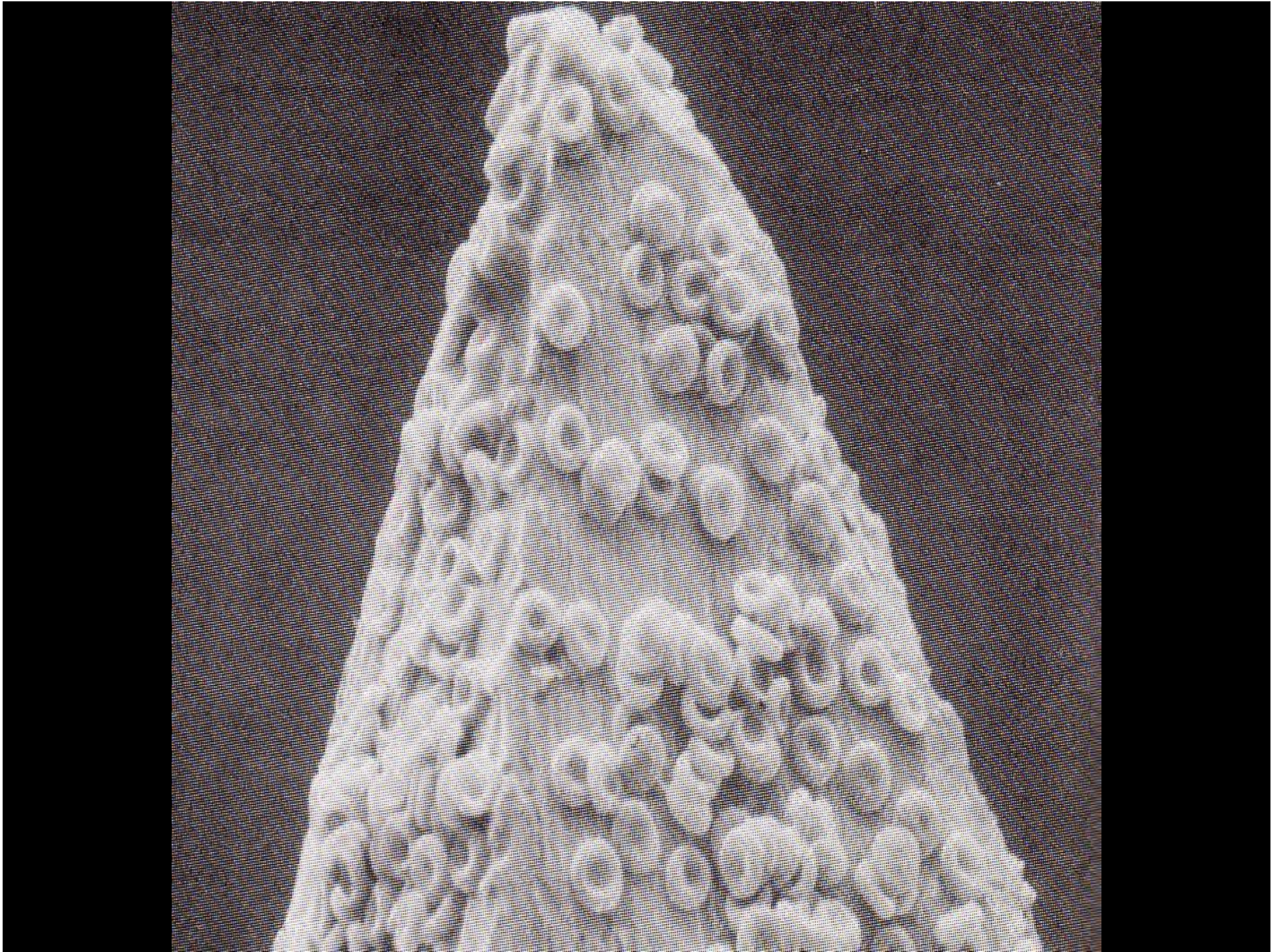




**Today & next week  
we'll cover blood  
chemistry to  
ensure for  
adequate lab prep  
time & incubation.**

# What's in Blood? Plasma & Blood Cells

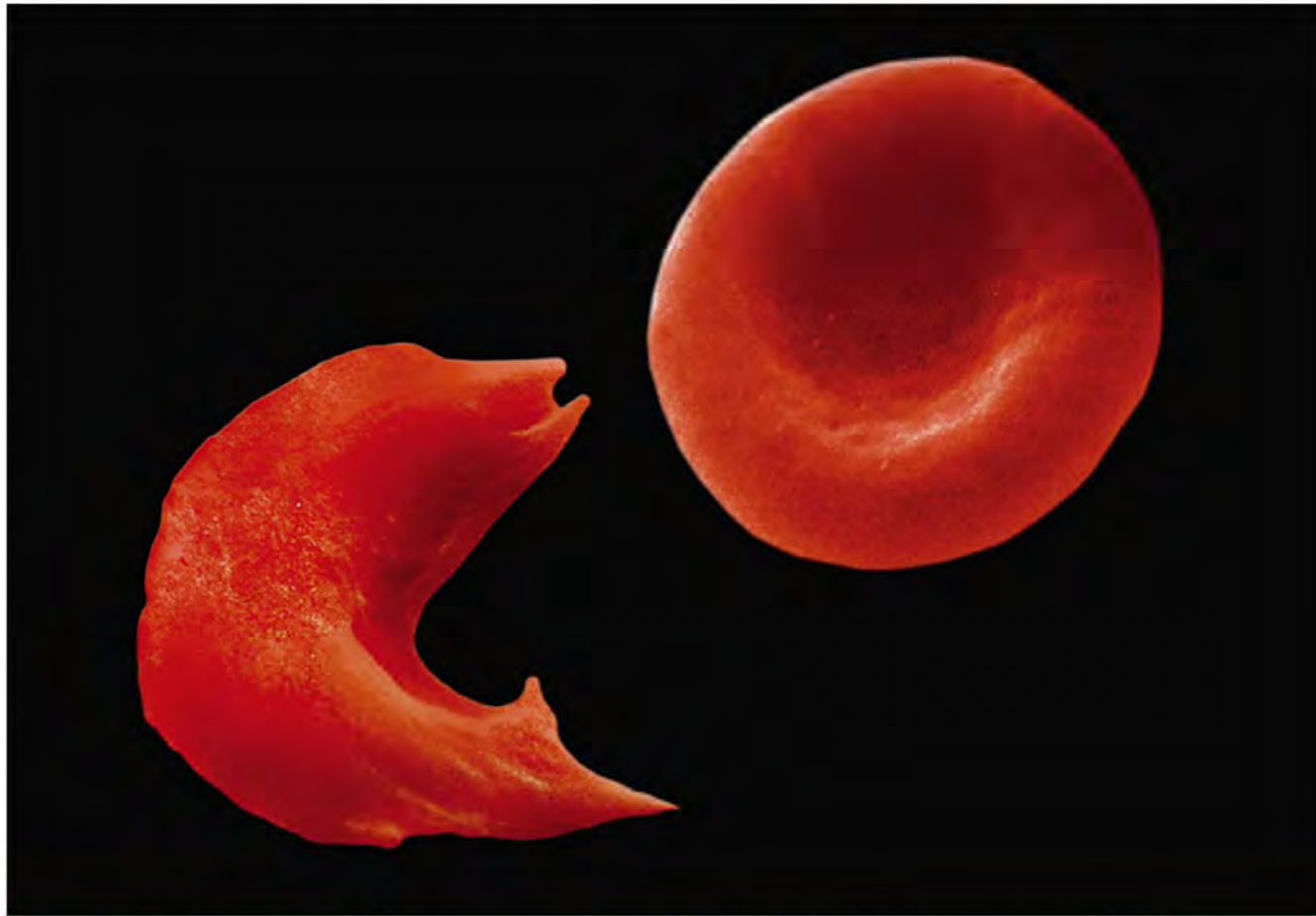






Sickle-shaped blood cells

Normal red blood cells



© Dr. Stanley Flegler/Visuals Unlimited

### What a difference one amino acid can make!

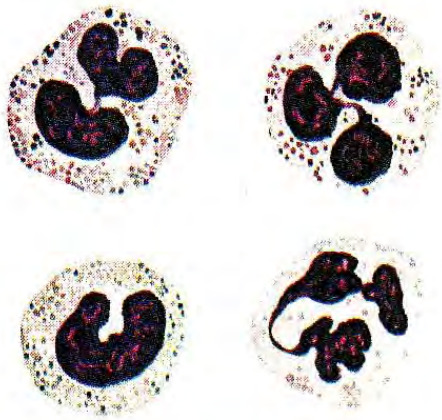
Amino acid sequence of normal hemoglobin:

Val — His — Leu — Thr — Pro — Glu — Glu

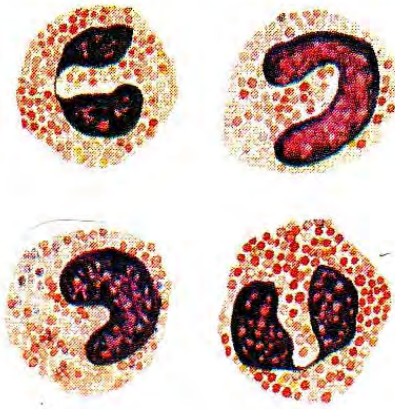
Amino acid sequence of sickle-cell hemoglobin:

Val — His — Leu — Thr — Pro — Val — Glu

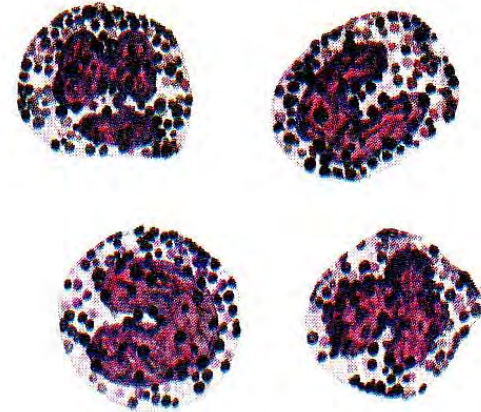
S&W 2011 fig 6-5 p 194



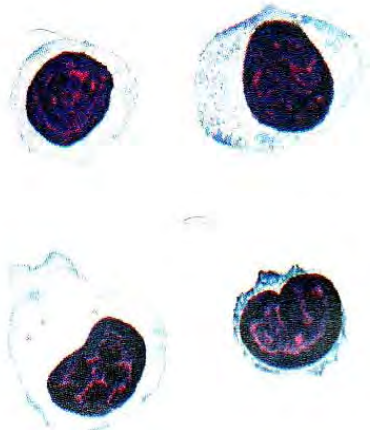
NEUTROPHILS



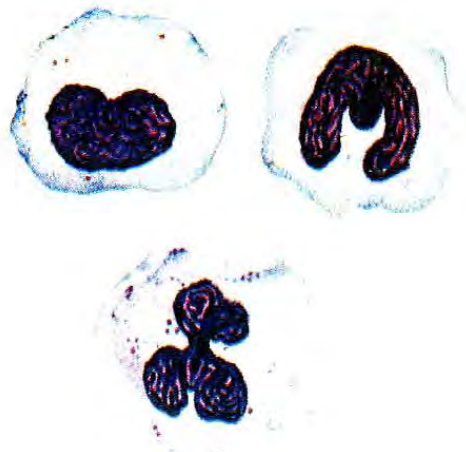
EOSINOPHILS



BASOPHILS



LYMPHOCYTES



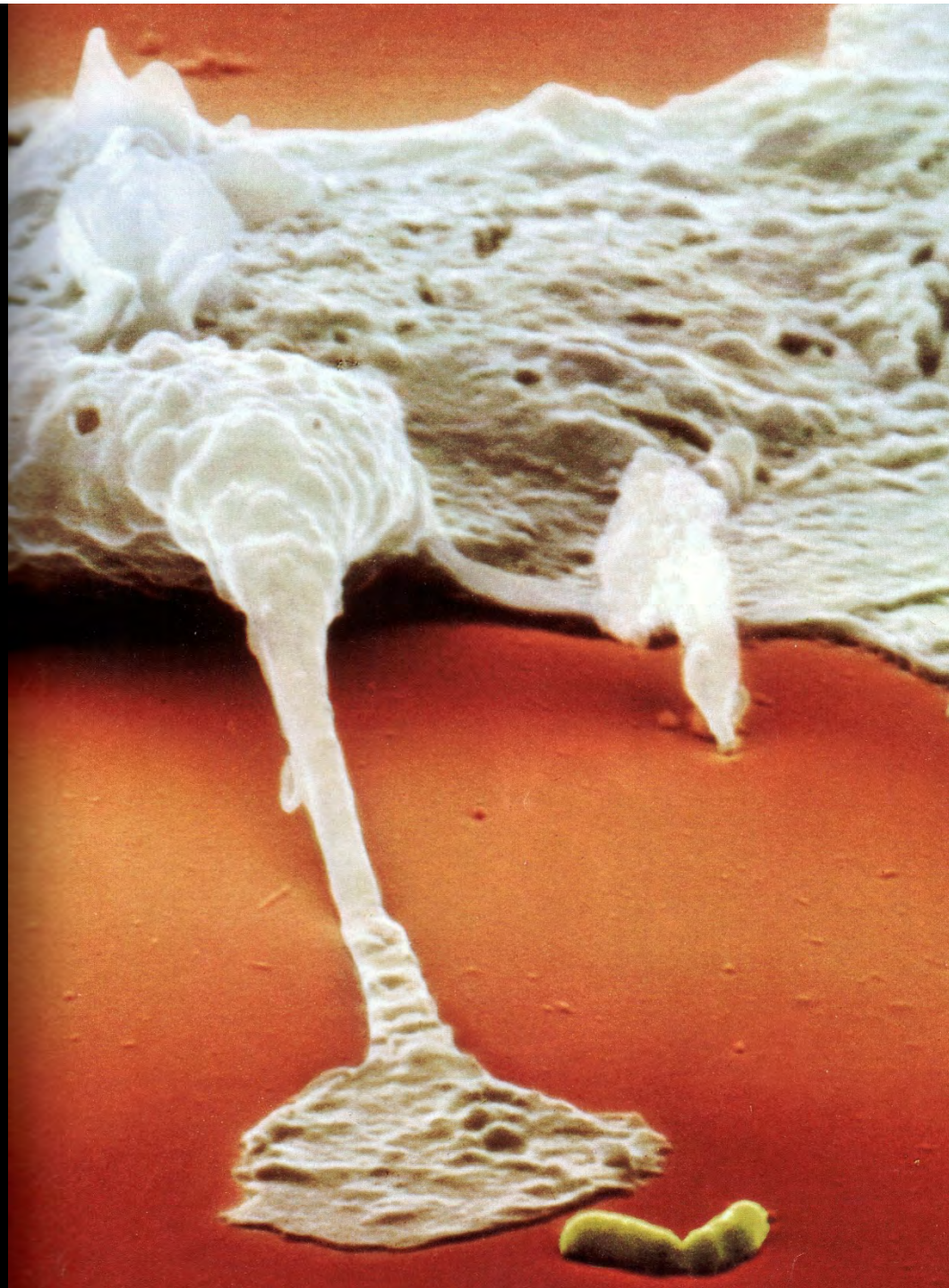
MONOCYTES



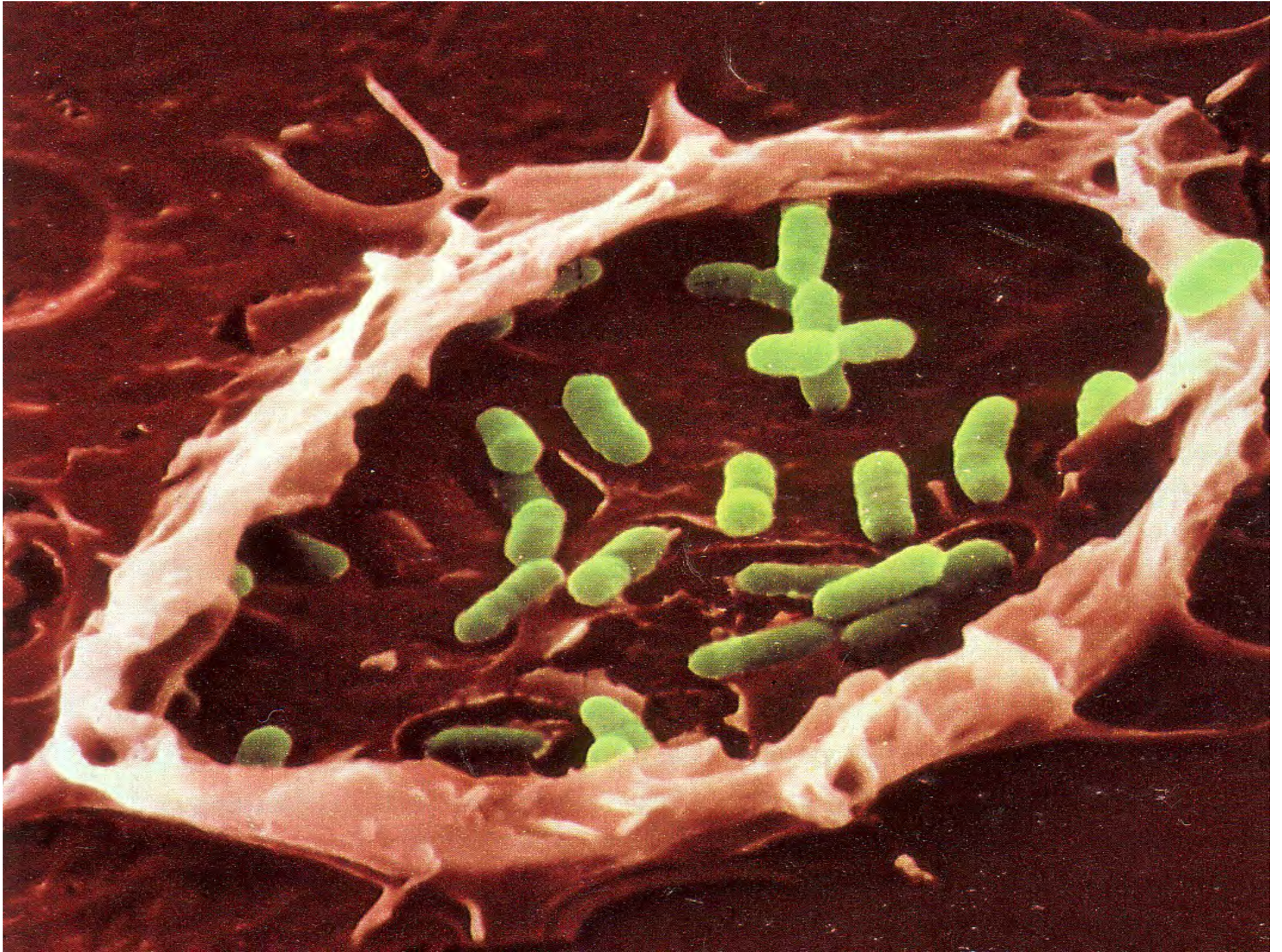
PLATELETS

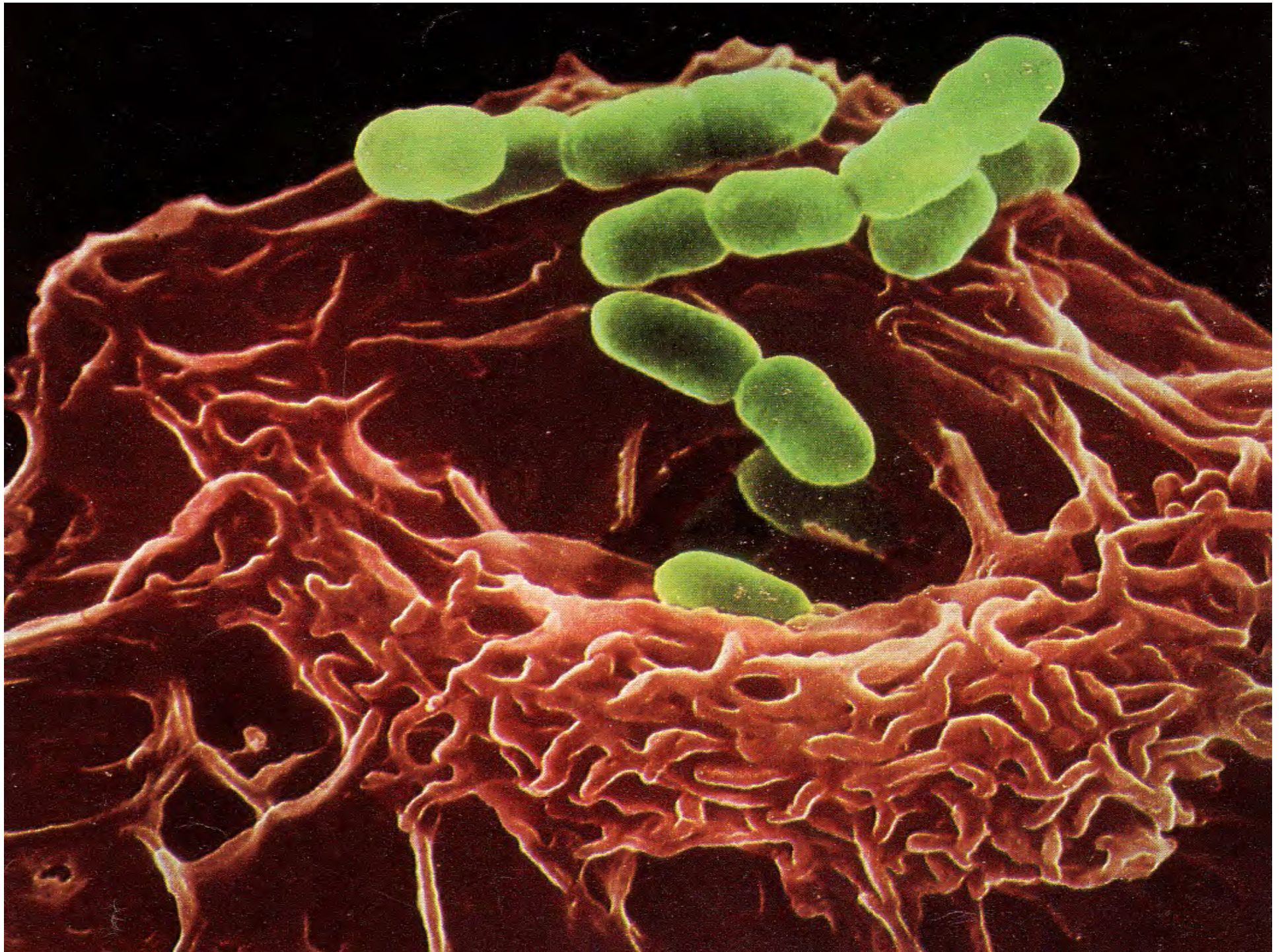


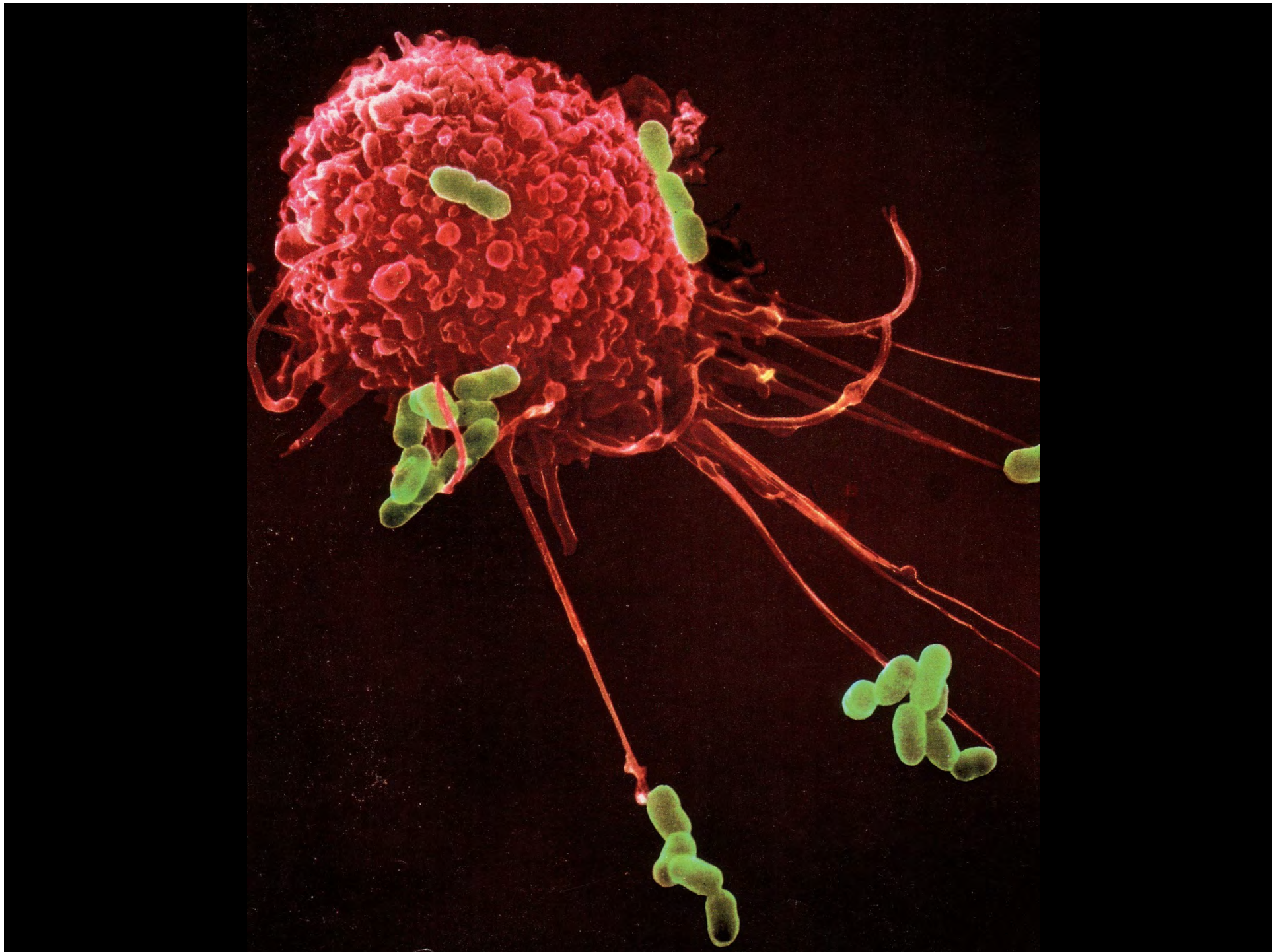
ERYTHROCYTES



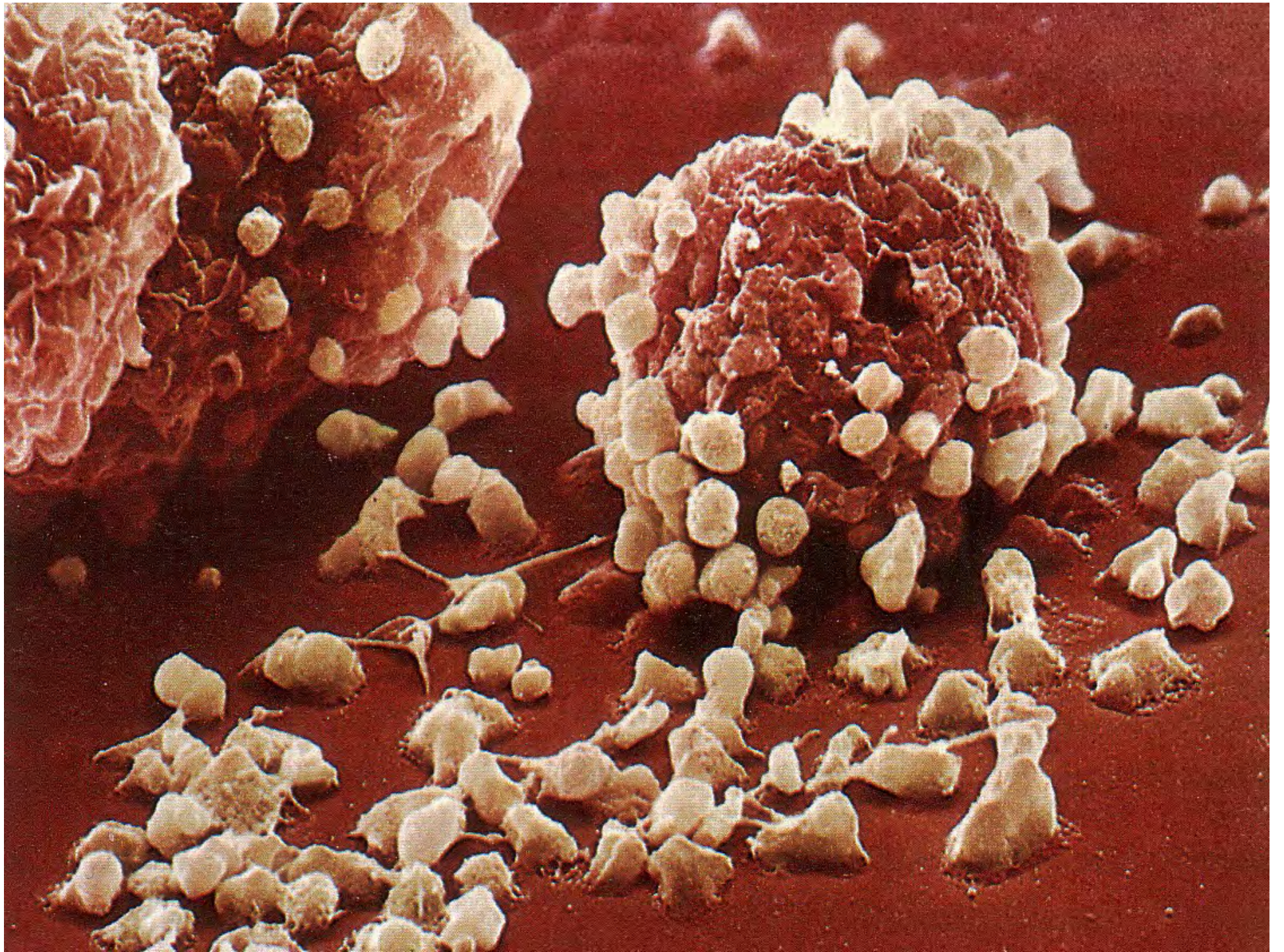


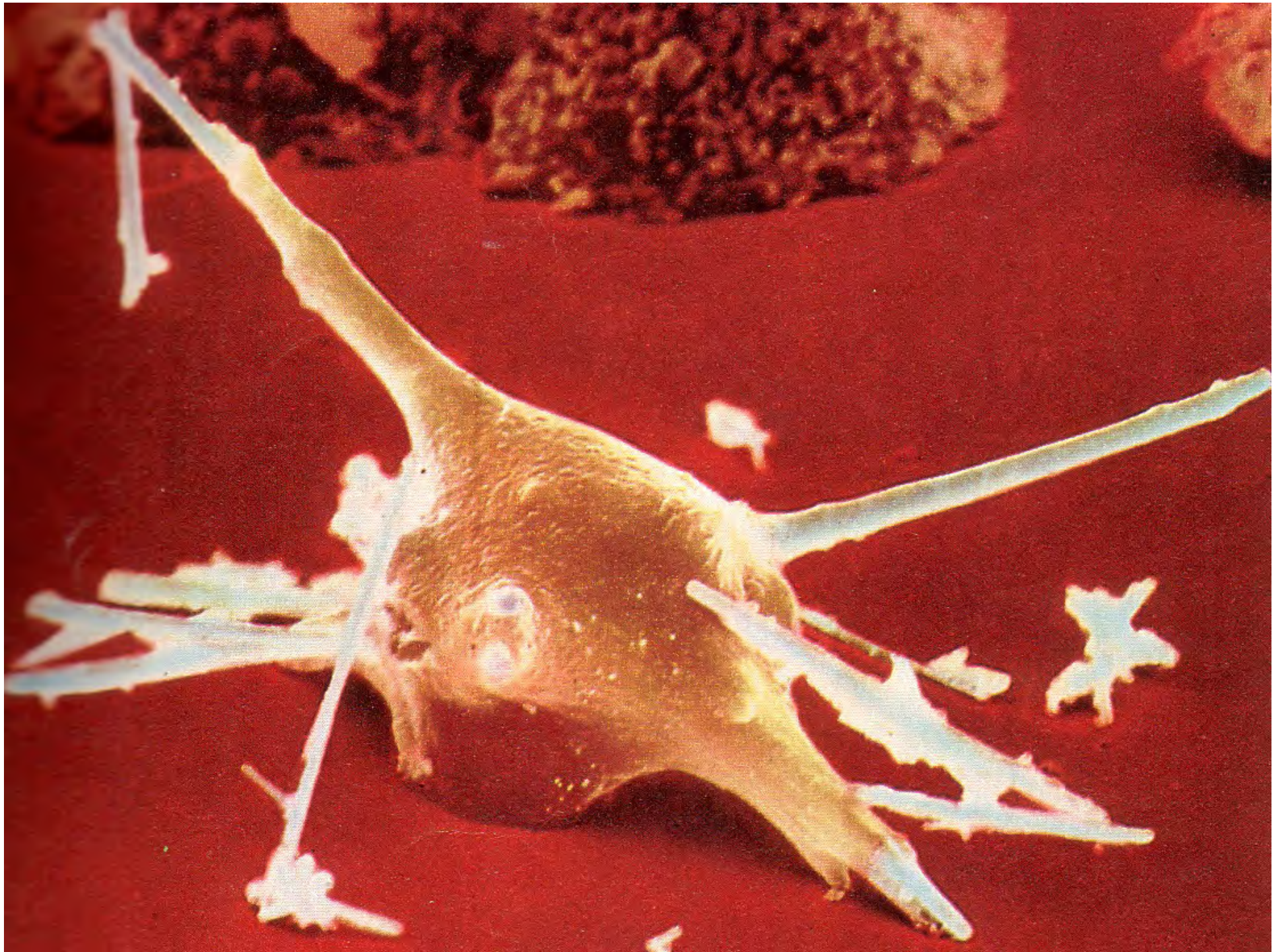


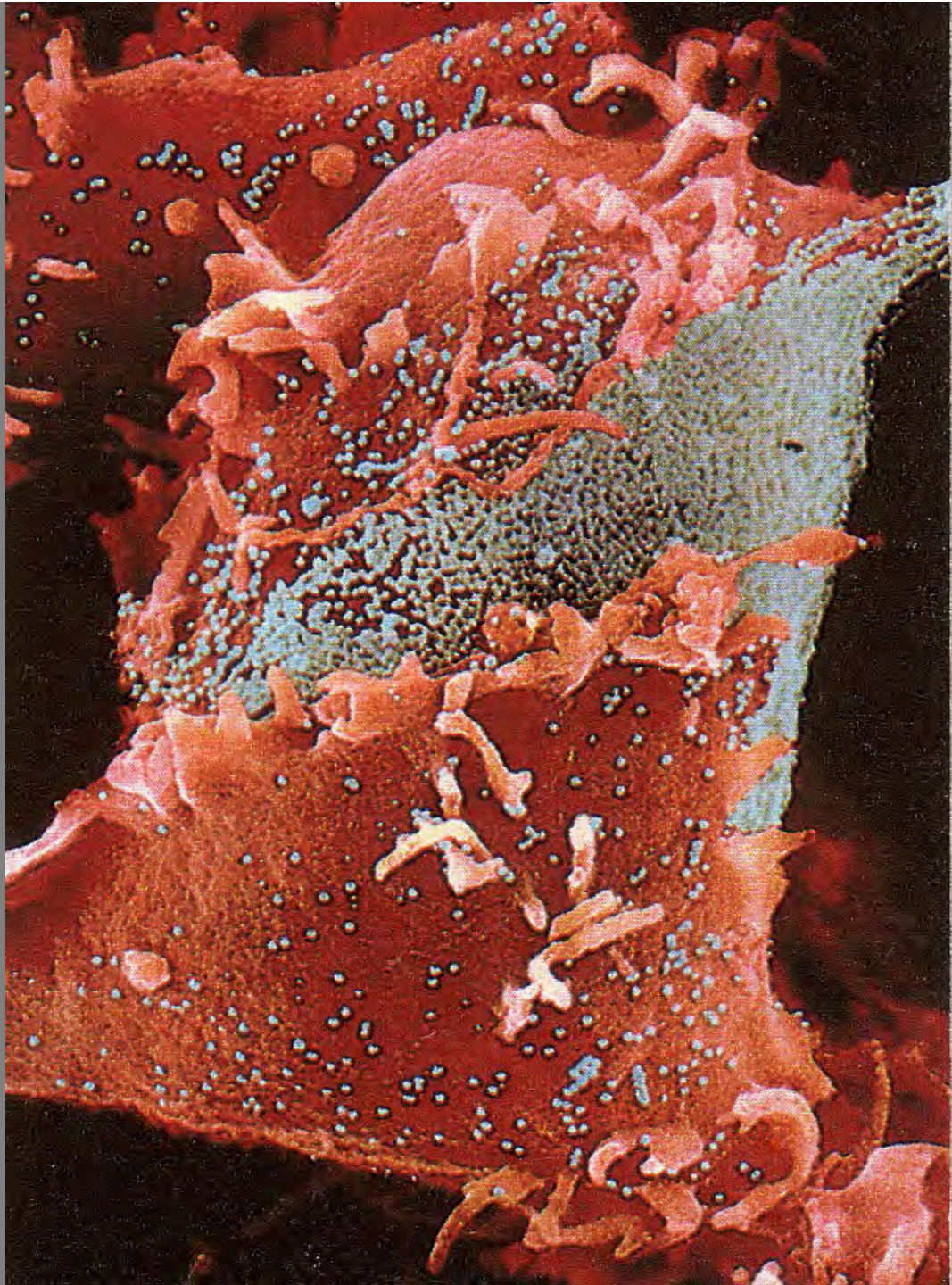


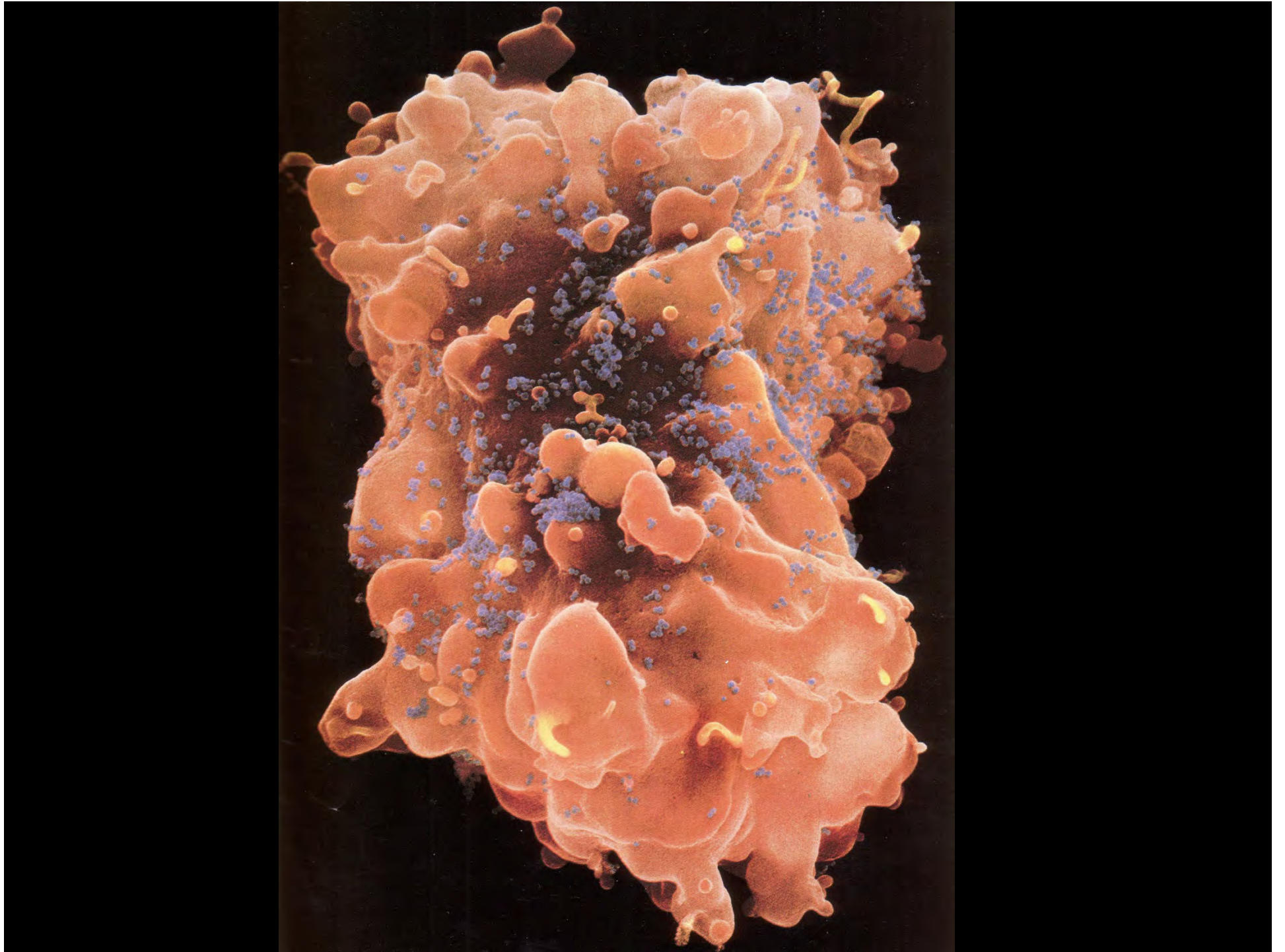




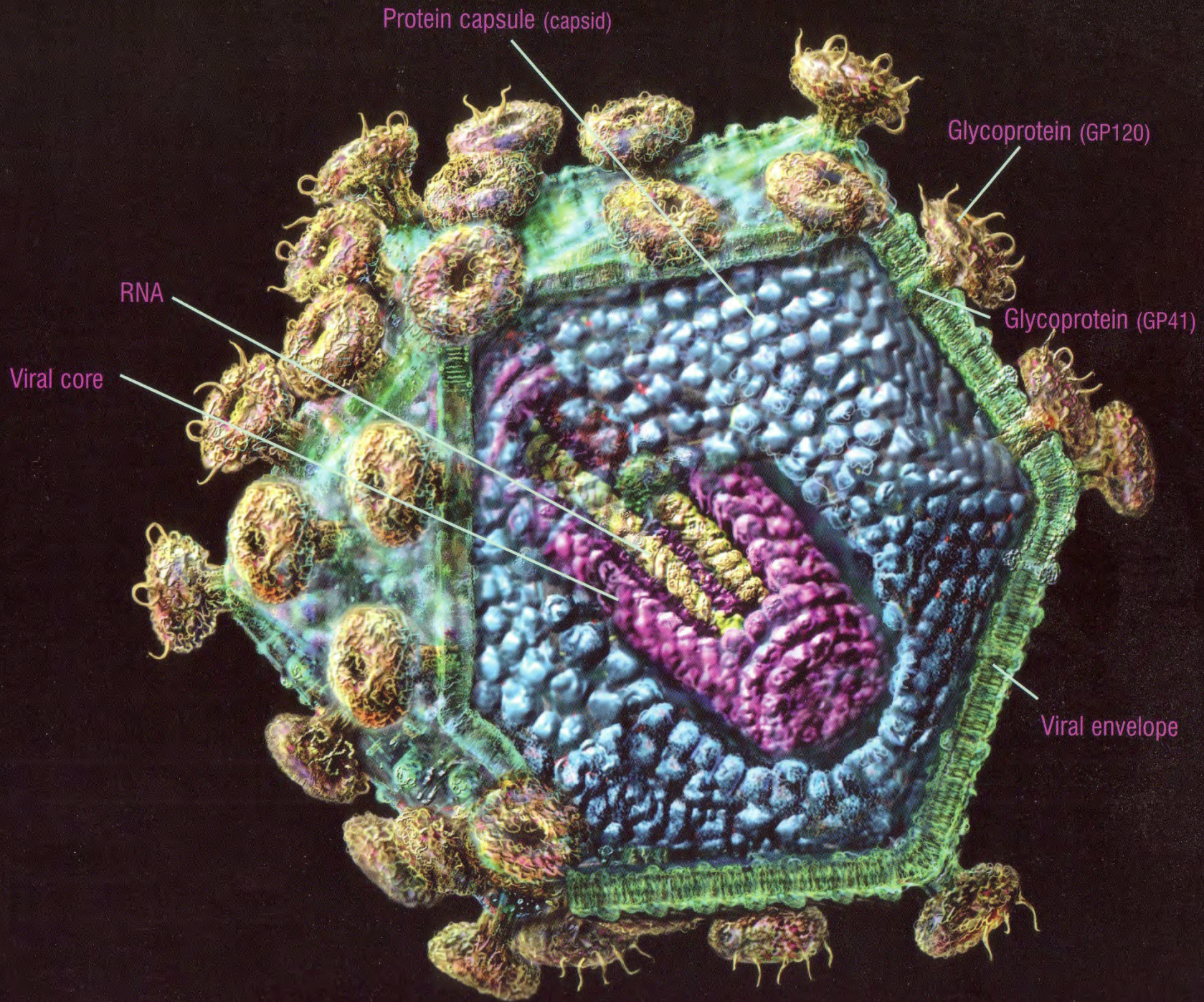


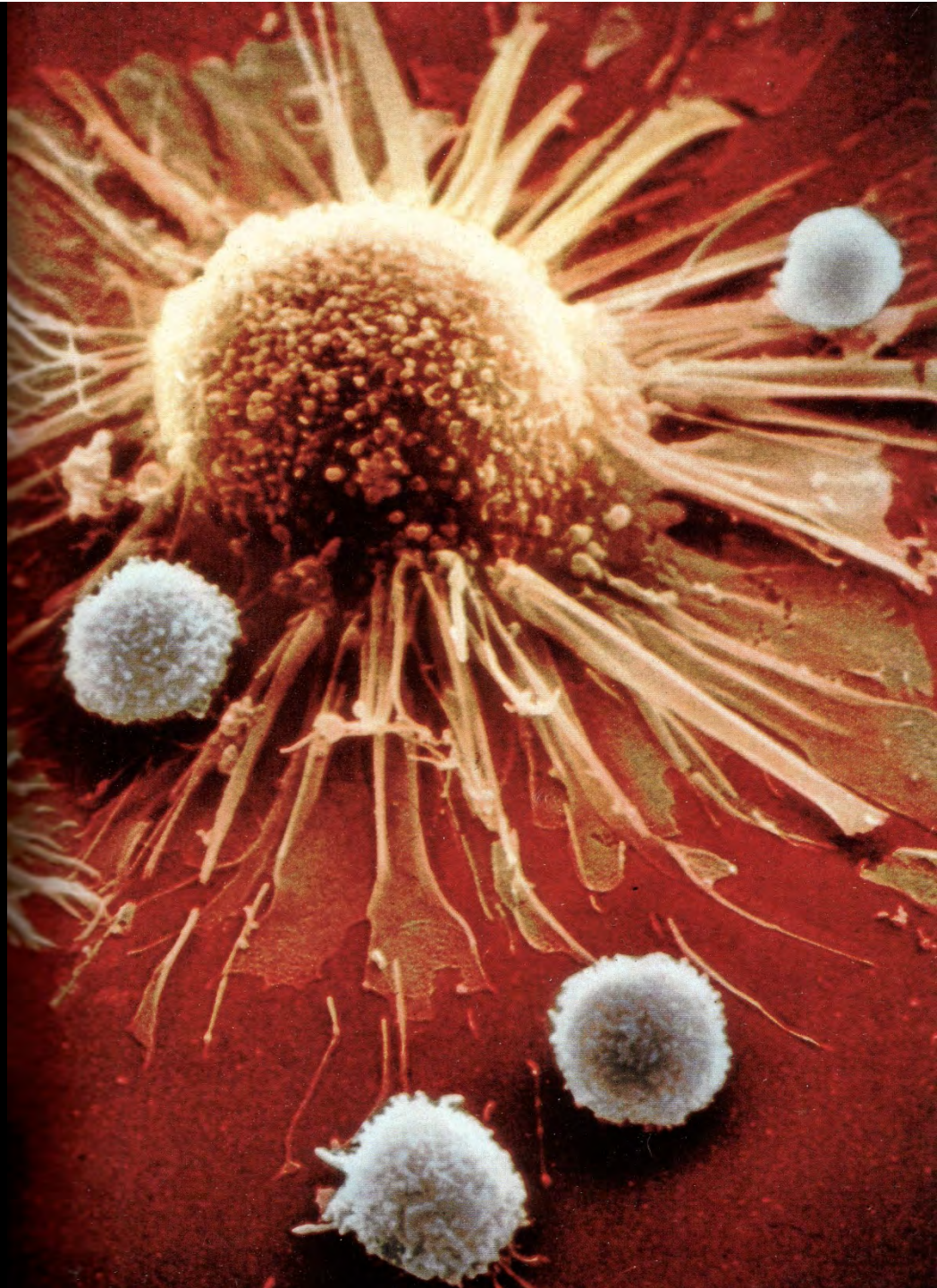






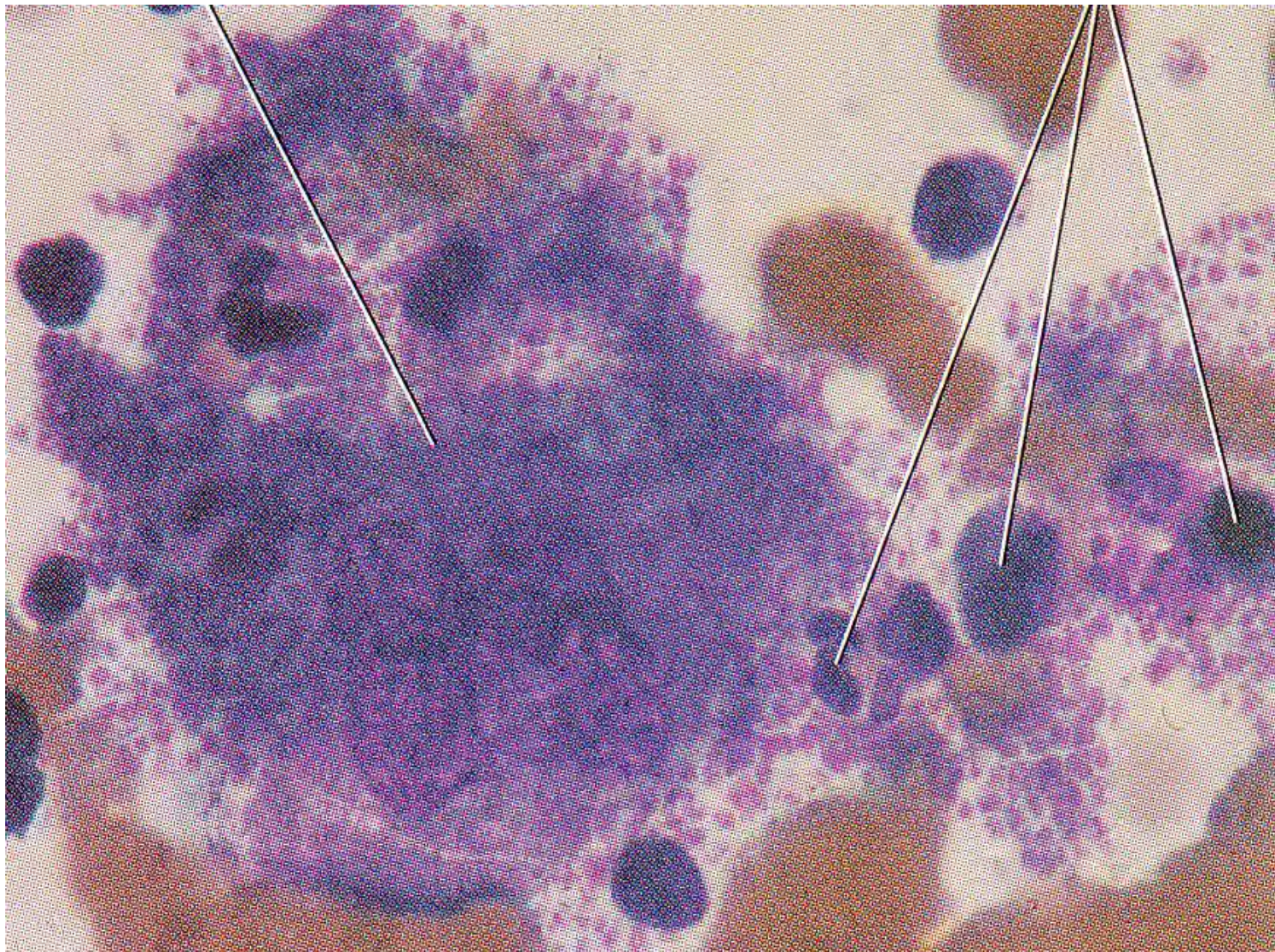










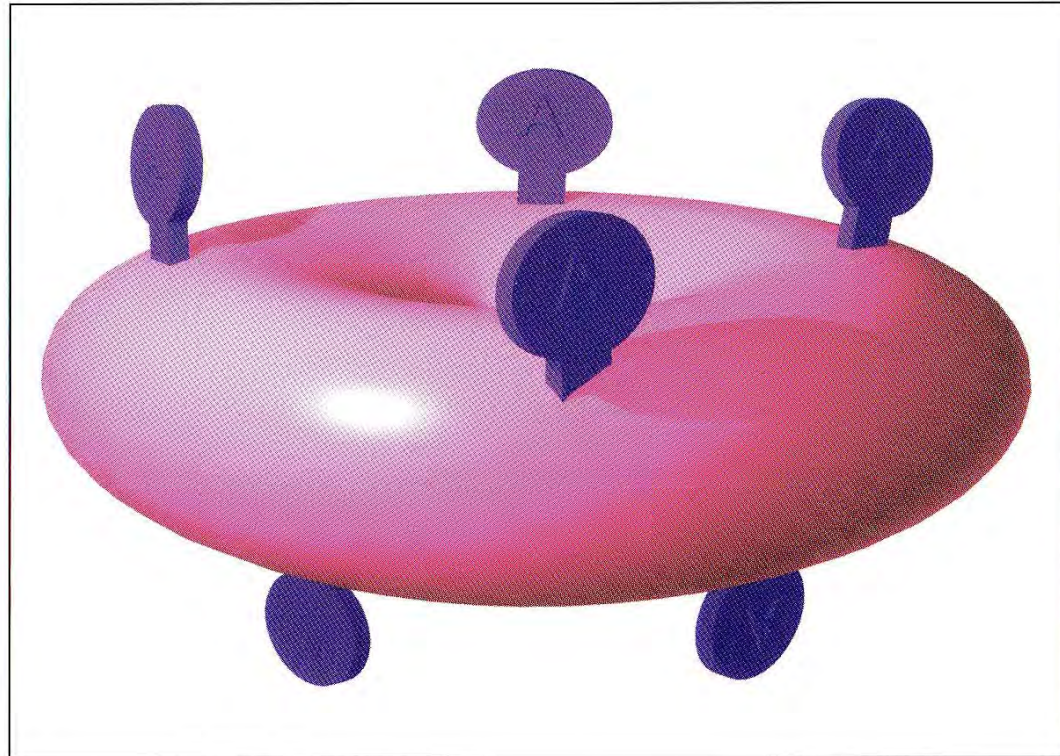


**Q?**

**Discussion**

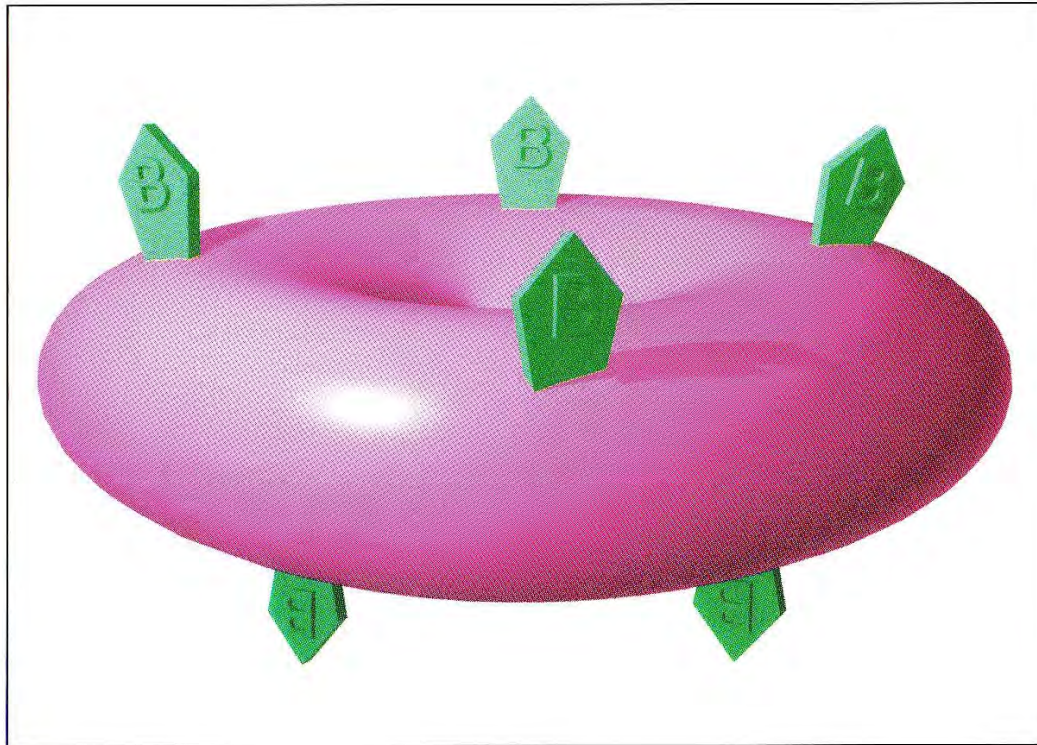
**Break**

A



A Antigens  
(Agglutinogens)

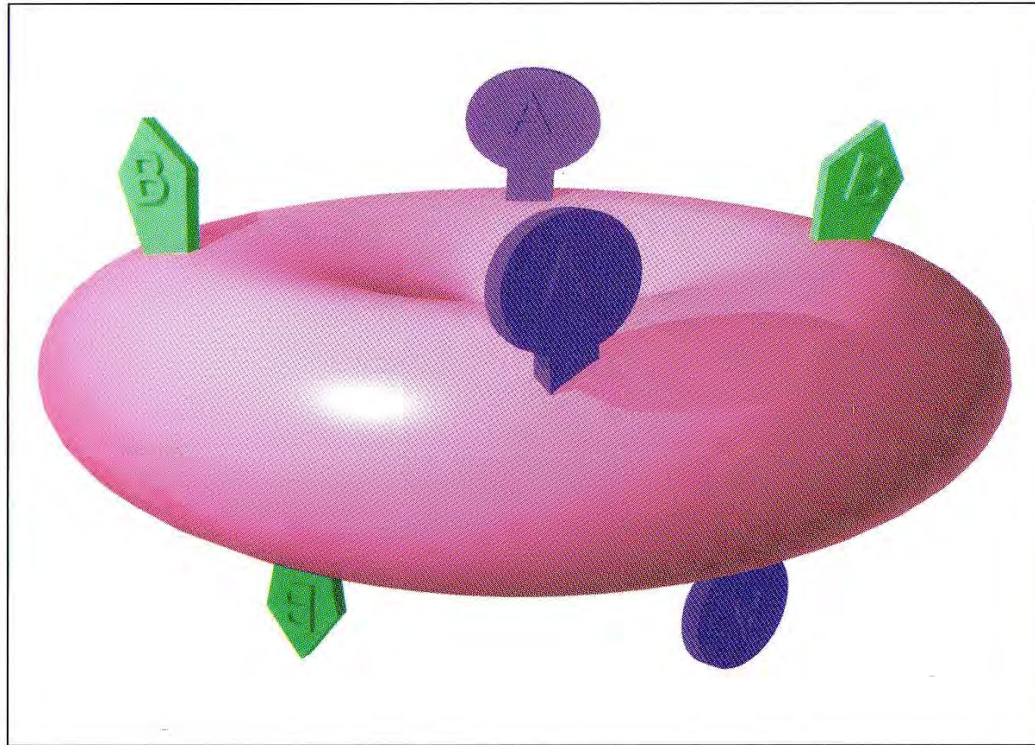
# B



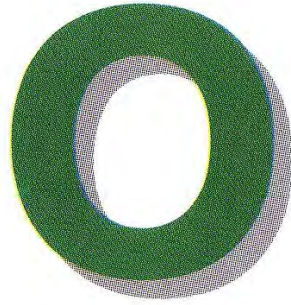
**B Antigens**  
(Agglutinogens)



# AB



A & B Antigens  
(Agglutinogens)

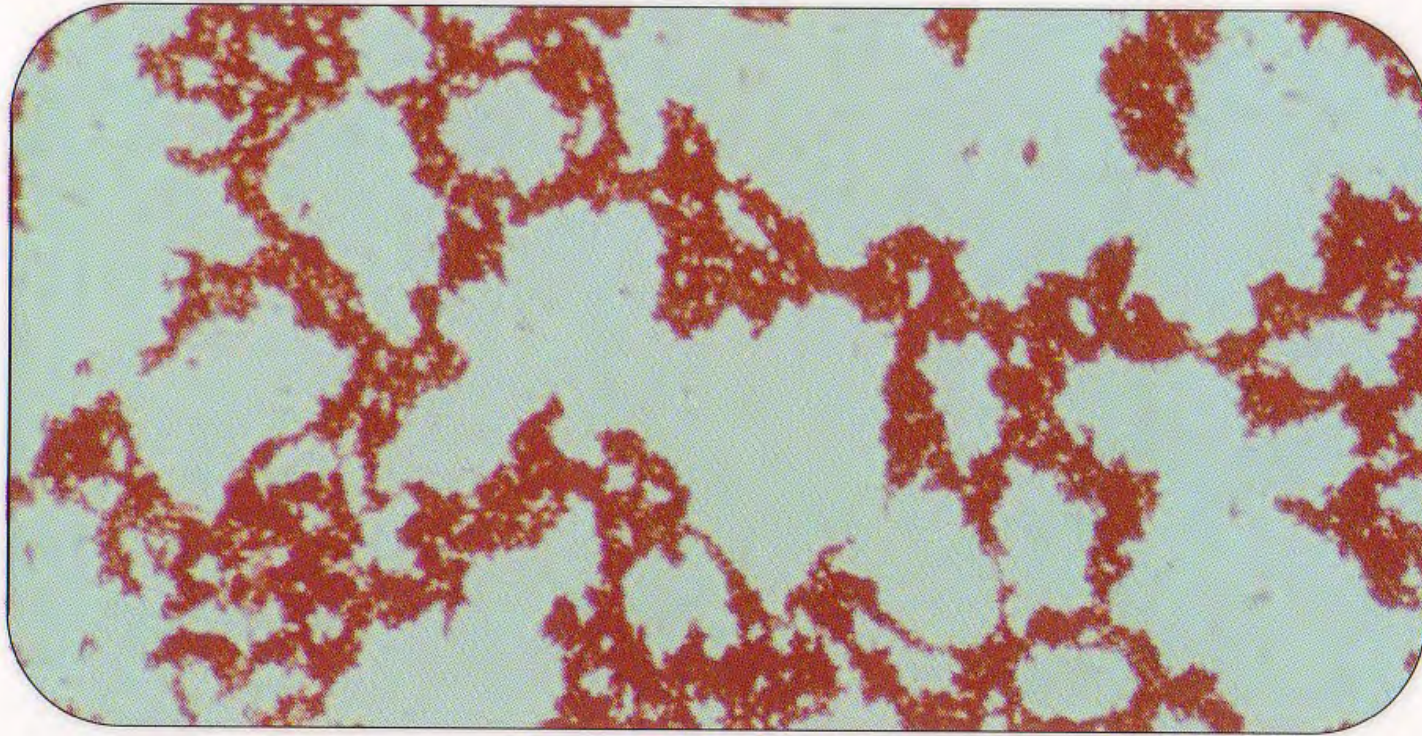


No Antigens  
(Agglutinogens)

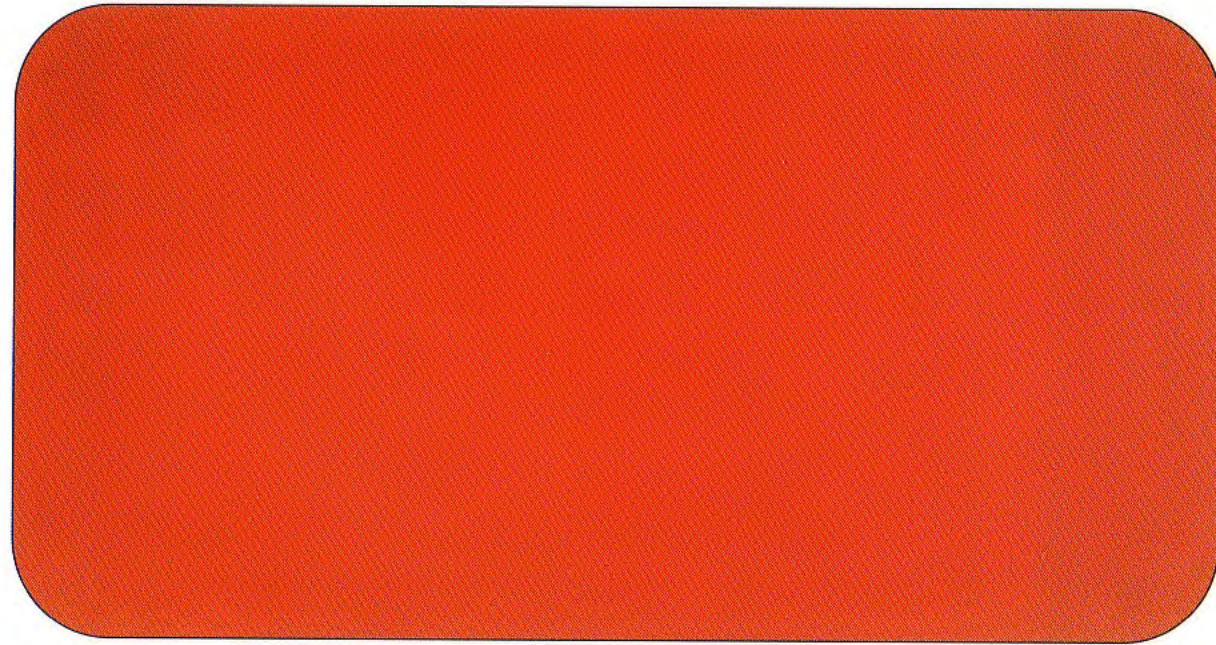


# A Antibodies

(Agglutinins)

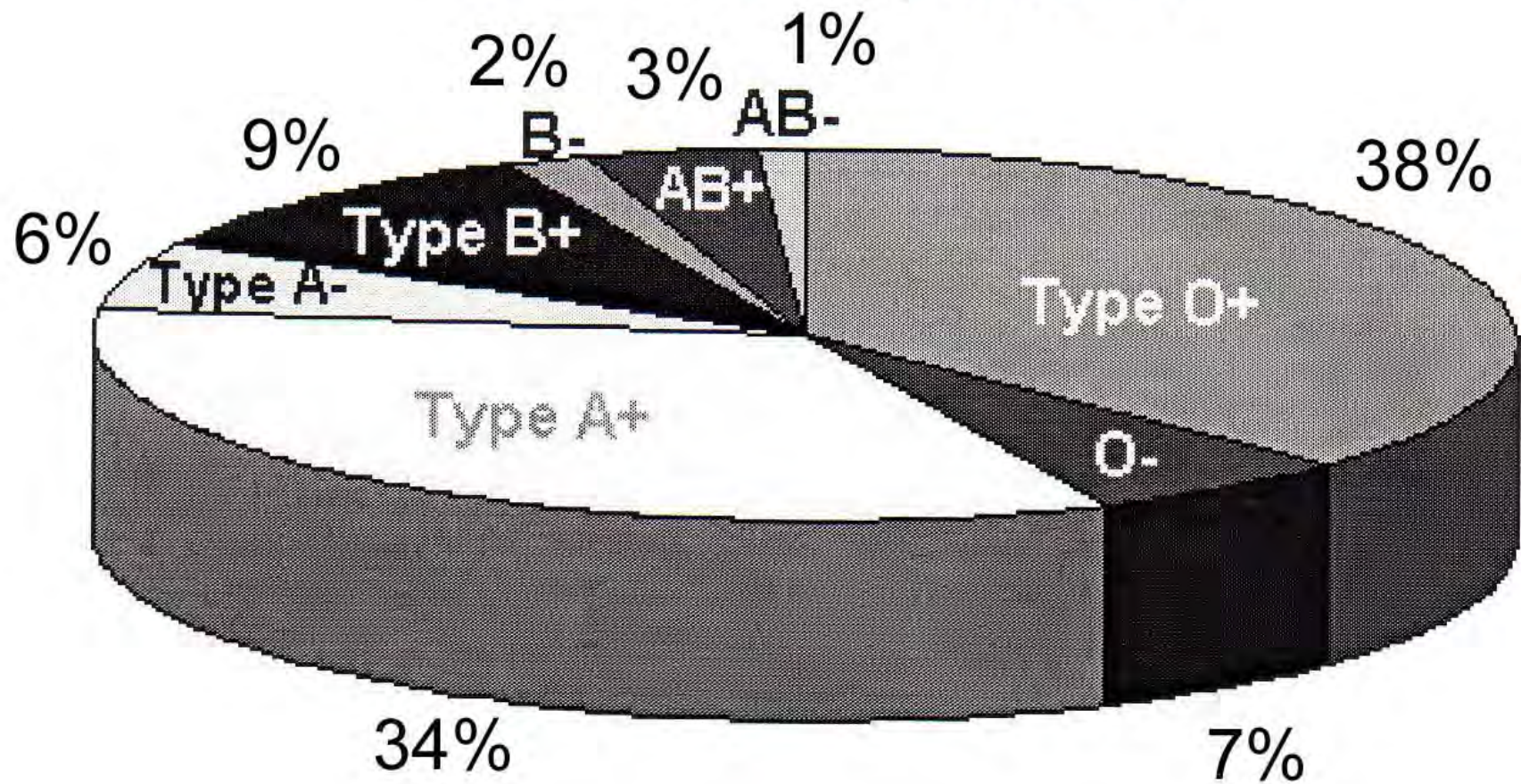


Clumping with  
anti-A serum



No Clumping with  
anti-A serum

# Blood Type Distribution, General Population



NOVEMBER 1997

\$2.50

# NUTRITION ACTION

H E A L T H   L E T T E R

CENTER FOR SCIENCE IN THE PUBLIC INTEREST

VOLUME 24 / NUMBER 9

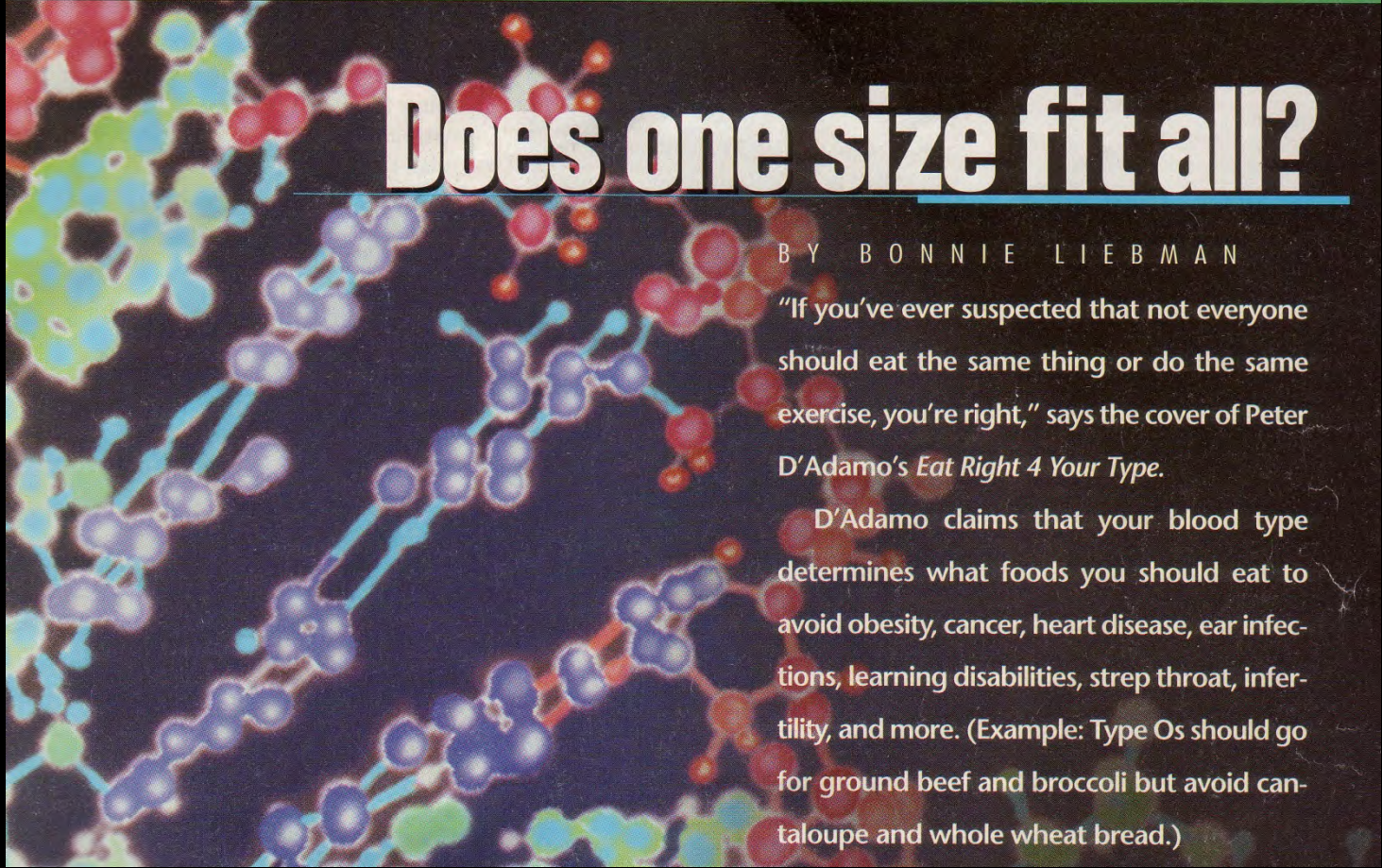
What's New in  
Fast Food?—page 13

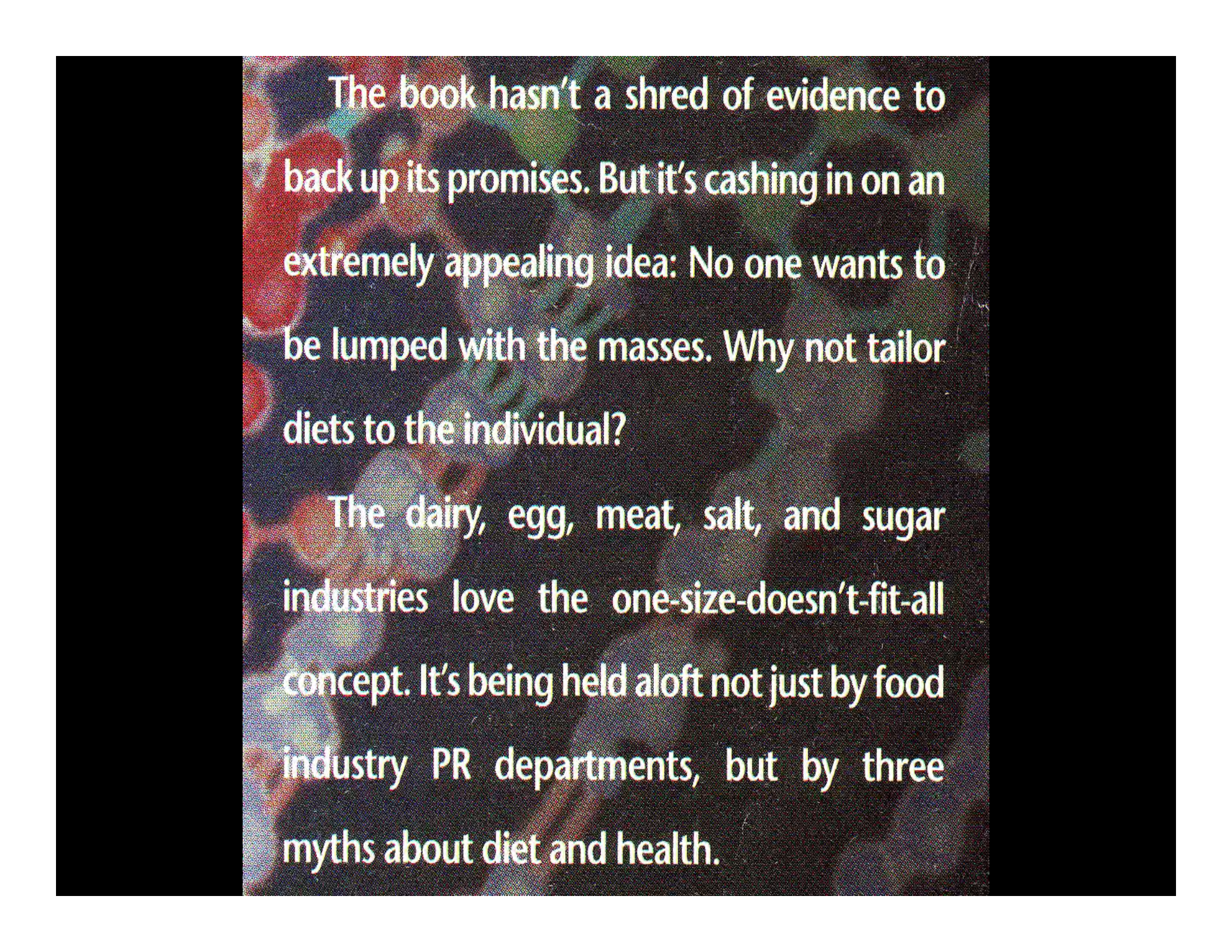
## Does one size fit all?

BY BONNIE LIEBMAN

"If you've ever suspected that not everyone should eat the same thing or do the same exercise, you're right," says the cover of Peter D'Adamo's *Eat Right 4 Your Type*.

D'Adamo claims that your blood type determines what foods you should eat to avoid obesity, cancer, heart disease, ear infections, learning disabilities, strep throat, infertility, and more. (Example: Type Os should go for ground beef and broccoli but avoid cantaloupe and whole wheat bread.)





The book hasn't a shred of evidence to back up its promises. But it's cashing in on an extremely appealing idea: No one wants to be lumped with the masses. Why not tailor diets to the individual?

The dairy, egg, meat, salt, and sugar industries love the one-size-doesn't-fit-all concept. It's being held aloft not just by food industry PR departments, but by three myths about diet and health.



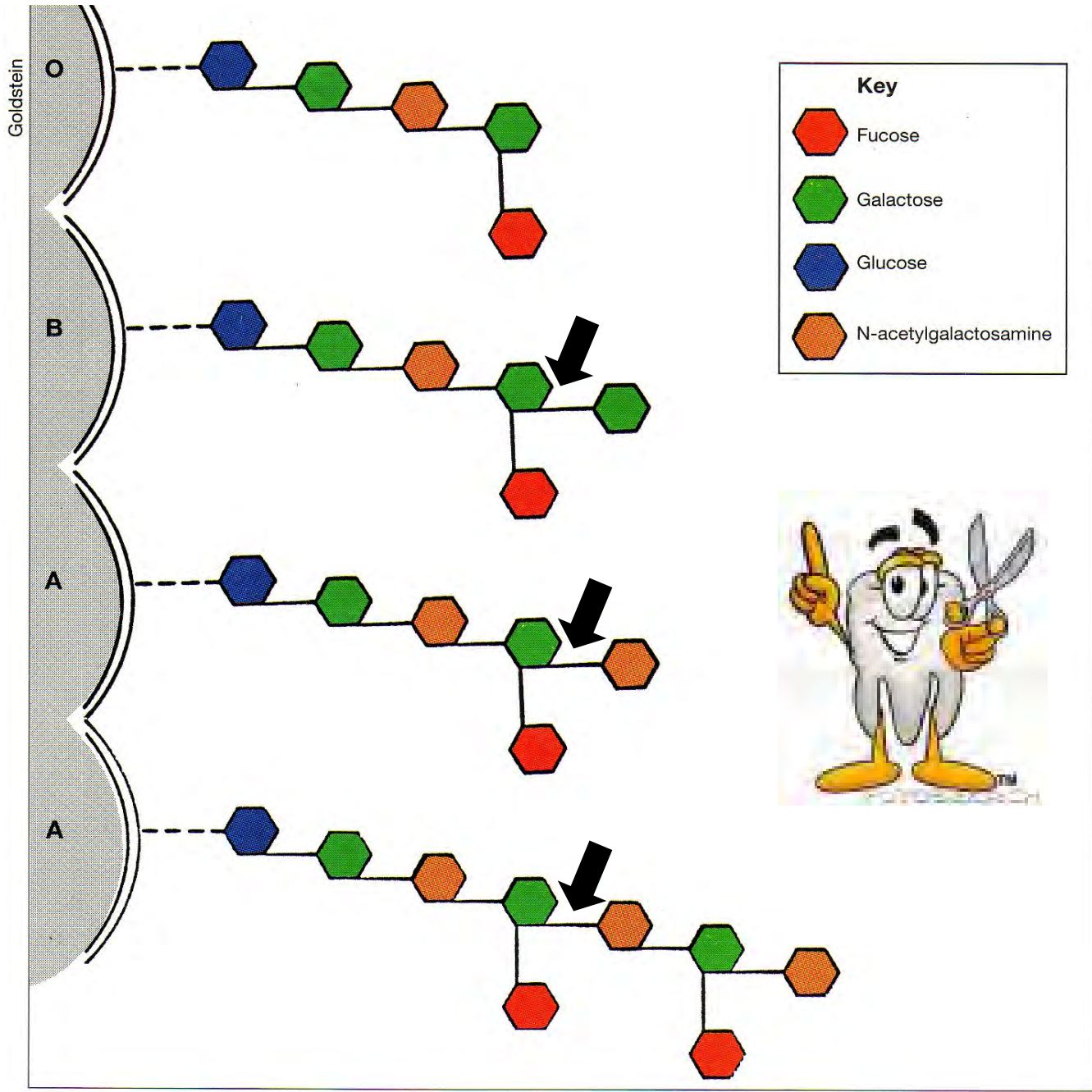
The Weekly Newsmagazine of Science

# SCIENCE NEWS

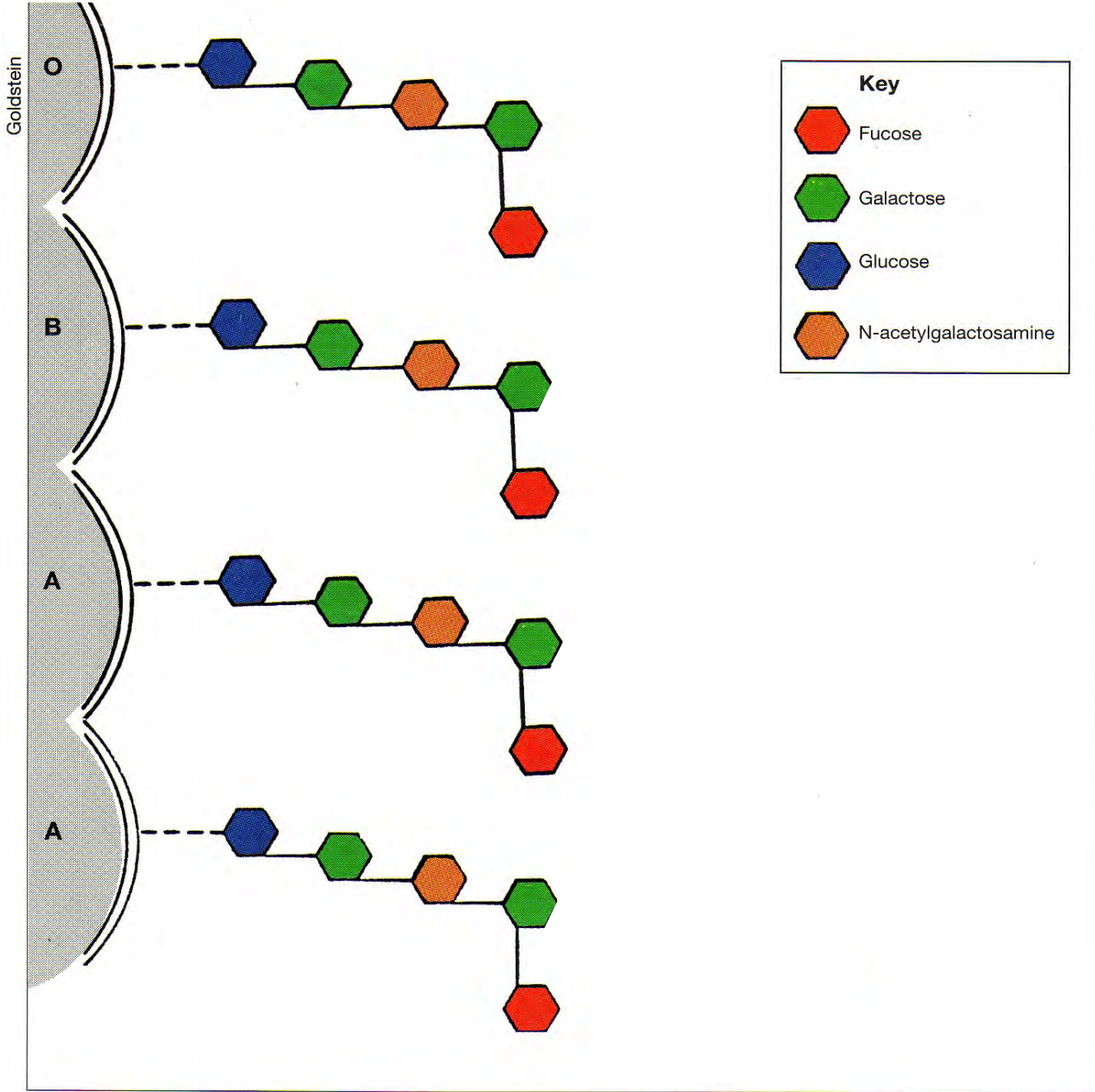
January 11, 1997  
Vol. 151, No. 2  
Pages 17-32

A microscopic view of blood cells, showing numerous red blood cells (erythrocytes) and several white blood cells (leukocytes) against a dark background. The red blood cells are biconcave discs, while the white blood cells are larger and more irregular in shape.

**Universal  
Blood**



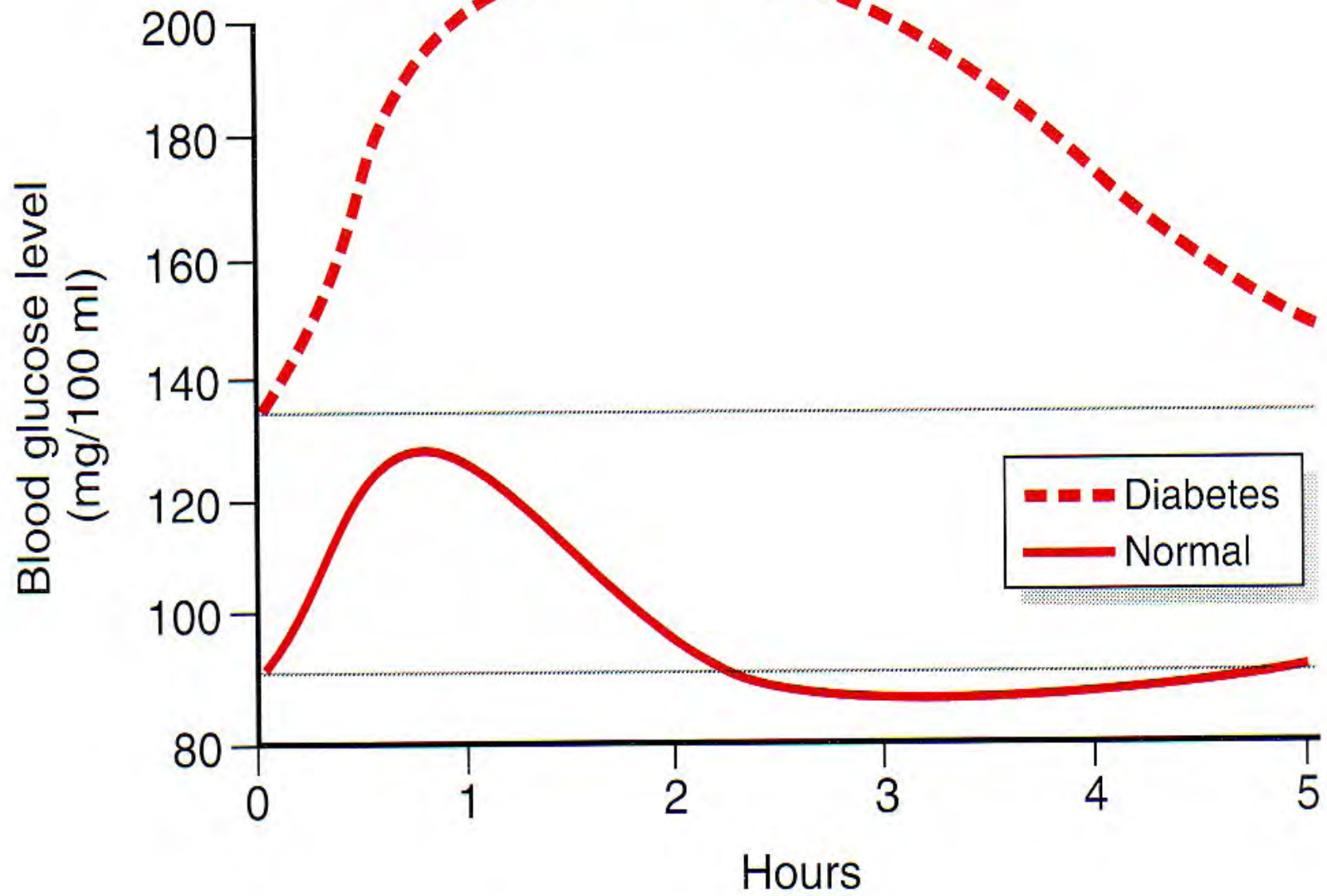
# All like Type O!



# ***Erythroblastosis Fetalis?***

**eg, Rh- mom  
Rh+ baby**

***<http://www.nlm.nih.gov/MEDLINEPLUS/ency/article/001298.htm#Alternative%20Names>***



***No food, drink or gum in lab!  
Thanks sincerely!***



# PREPARATION



WASH & DRY



ALCOHOL

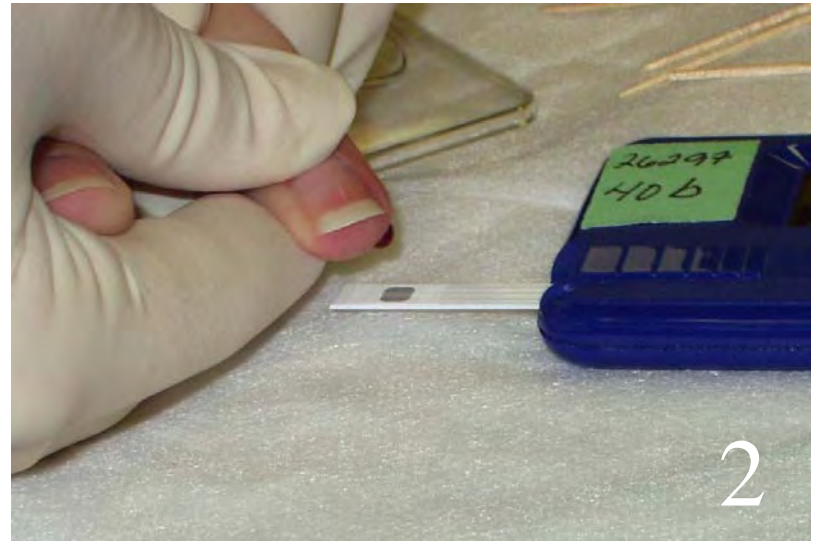


# SAMPLE+TESTS



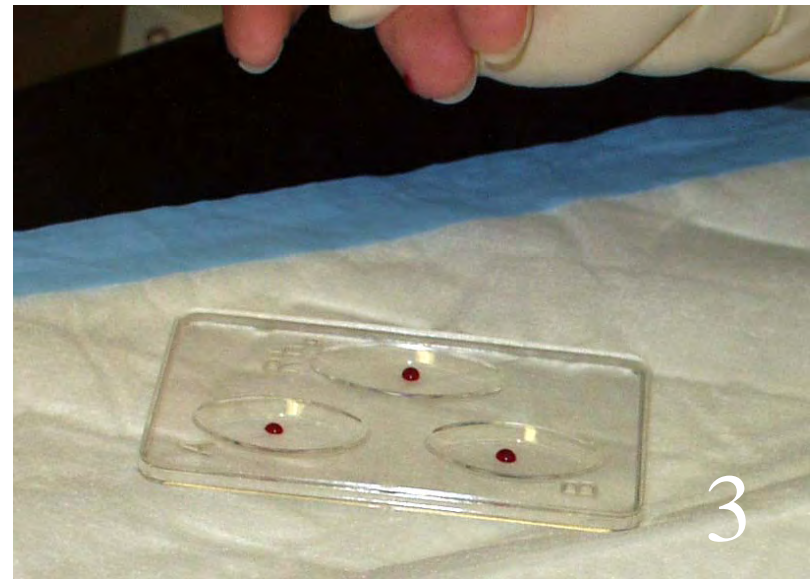
1

OBTAIN  $\mu$ SAMPLE



2

BLOOD GLUCOSE

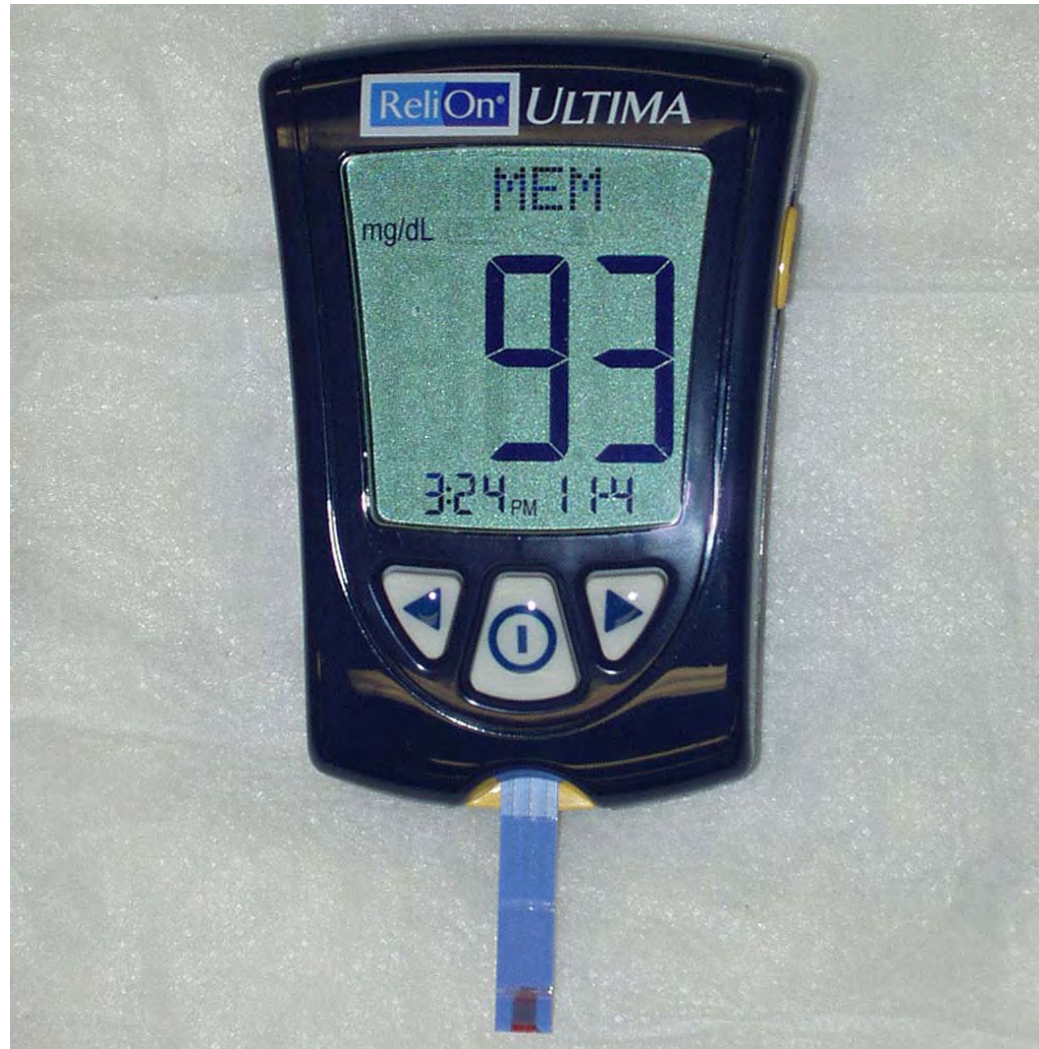


3

BLOOD TYPING



# BLOOD GLUCOSE

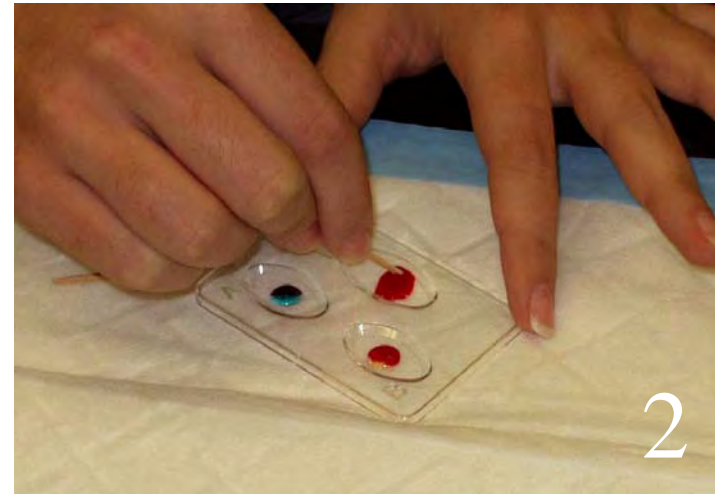


READ & RECORD!!

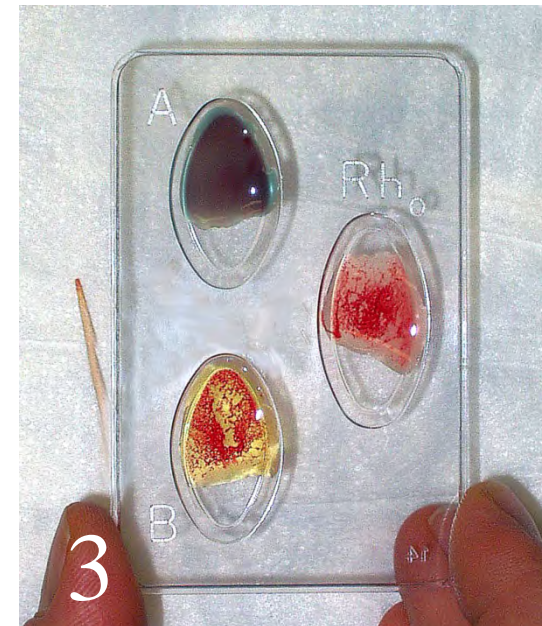
# BLOOD TYPING



ADD ANTISERA



MIX W/TOOTHPICKS



READ & RECORD!!

# CLEAN-UP!



FOLD DIAPER



BLOOD PRODUCTS



REWASH!!

**Q about  
Blood Chem  
Lab?**

WOW!



SUPER



~ TOP 5-10!

EXCELLENT!!



~ TOP 15!

GREAT EFFORT



~ TOP 20-25!

# Class Frequency Distribution Report for BI 121 Midterm F14, Multiple Choice, Part II

Overall

Mean Score: 69.67%



Grade	Percent Score	Raw Score	Frequency	Percent
A	90.00 - 100.00	36.00 - 40.00	8	4.60
B	80.00 - 89.99	32.00 - 35.99	36	20.69
C	70.00 - 79.99	28.00 - 31.99	55	31.61
D	60.00 - 69.99	24.00 - 27.99	44	25.29
F	0.00 - 59.99	0.00 - 23.99	31	17.82

