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SIMRI 2024

Torino

La citologia nasale nella diagnostica delle rinosinusiti

Guglielmo Scala
Napoli

ALLERGOLOGIA

ORL



RINITE ALLERGICA

Può alleviare **7** sintomi dell'allergia

Doppia azione

antistaminica
+
decongestionante

starnuti | naso che cola | naso chiuso
prurito al naso | prurito agli occhi
lacrimazione | occhi arrossati

**RAPIDO
SOLLIEVO**

Reactine è un medicinale.
Prima dell'uso leggere attentamente il foglio illustrativo.
Aut. Min. del 16/01/2020

Può alleviare **7** sintomi dell'allergia

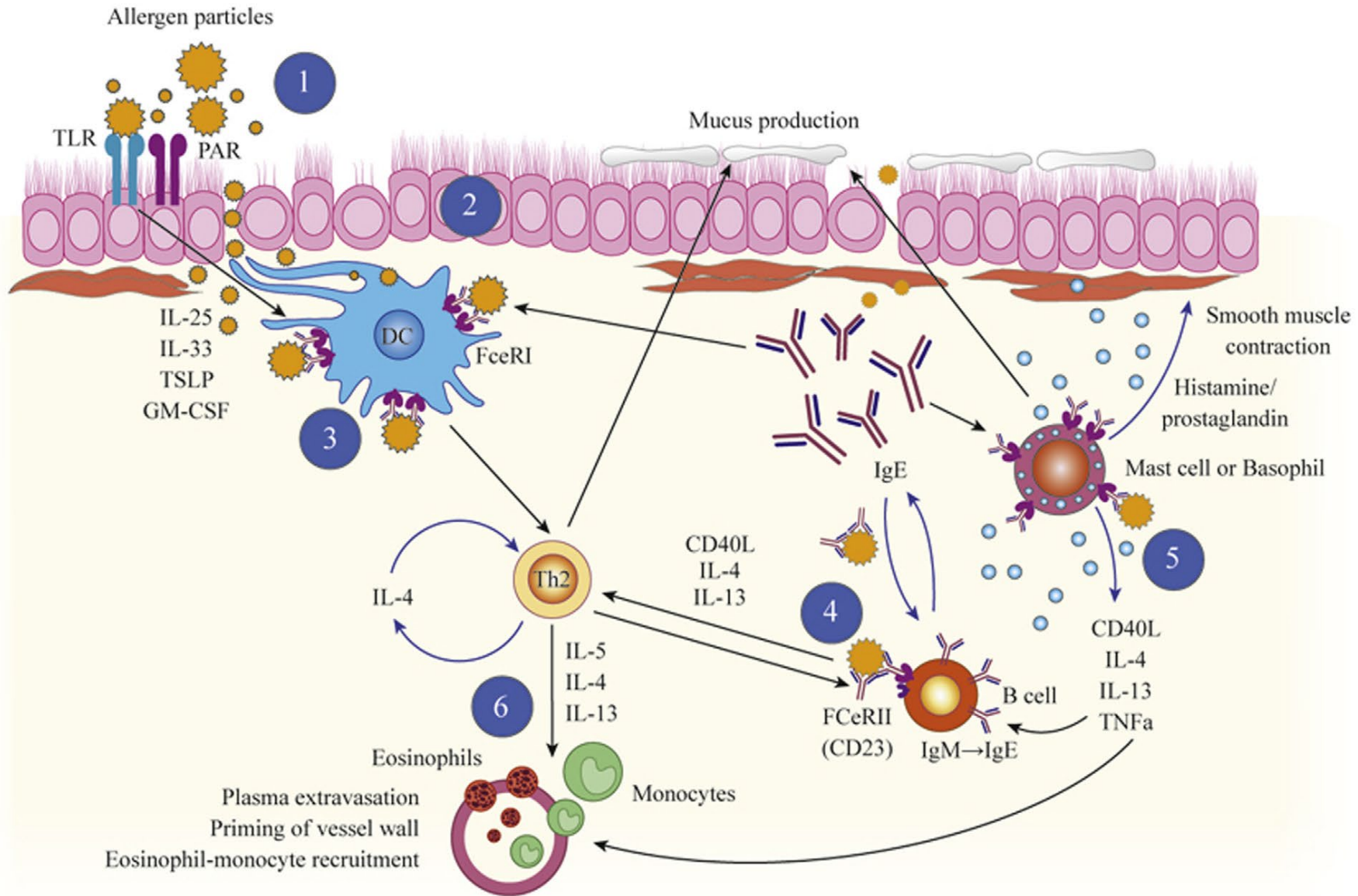


LA RINITE ALLERGICA NON E' UN FASTIDIO

E' UNA MALATTIA

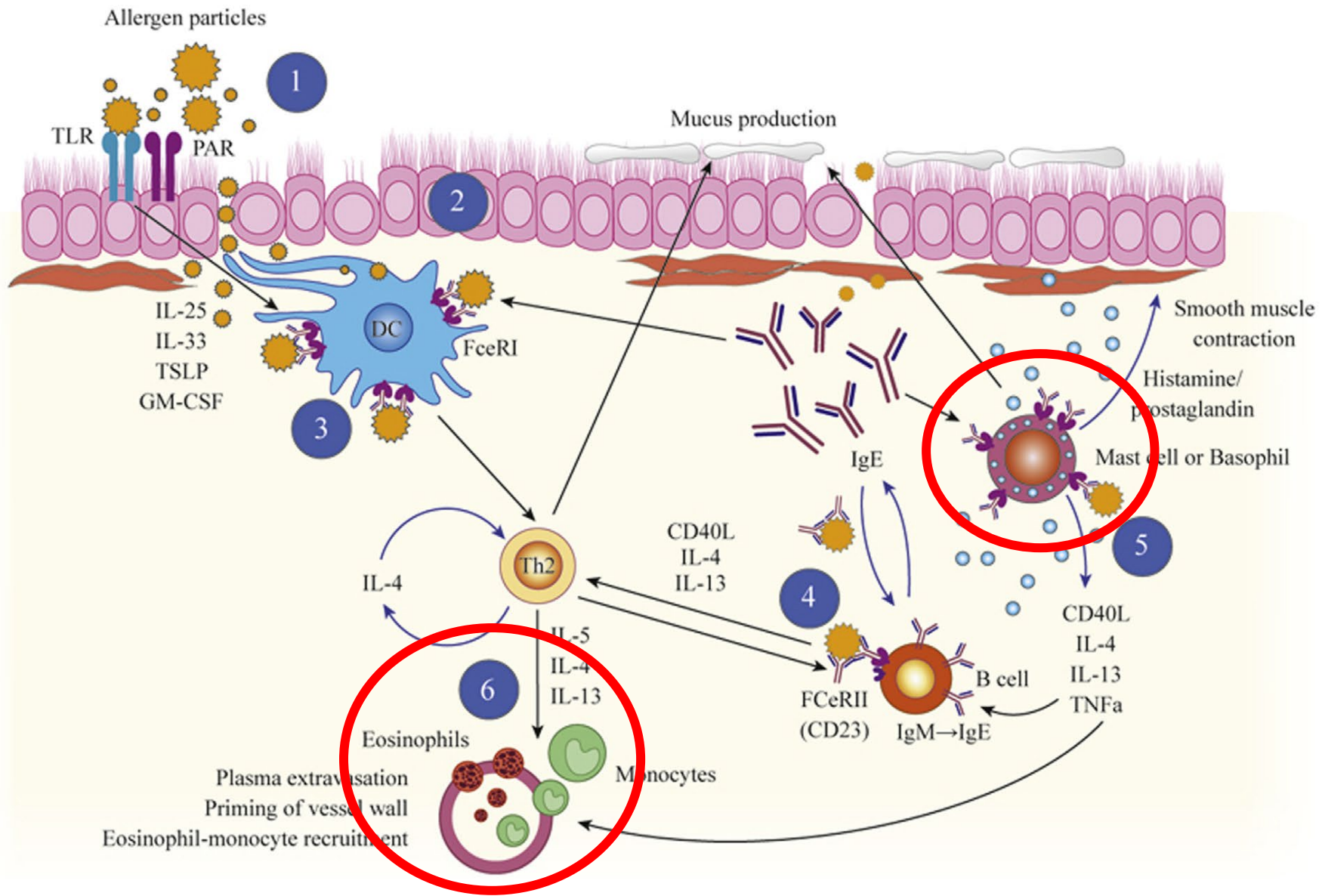
Respiratory allergy caused by house dust mites: What do we really know?

Calderon MA et al, 2015, *J Allergy Clin Immunol*

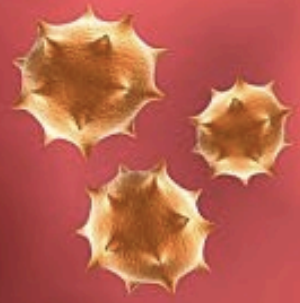


Respiratory allergy caused by house dust mites: What do we really know?

Calderon MA et al, 2015, *J Allergy Clin Immunol*



MECHANISM OF ALLERGY



Antigen

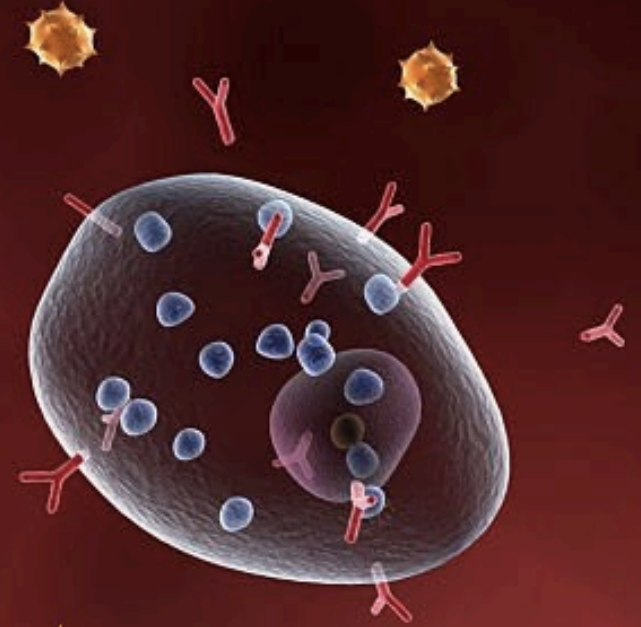


Mast Cell

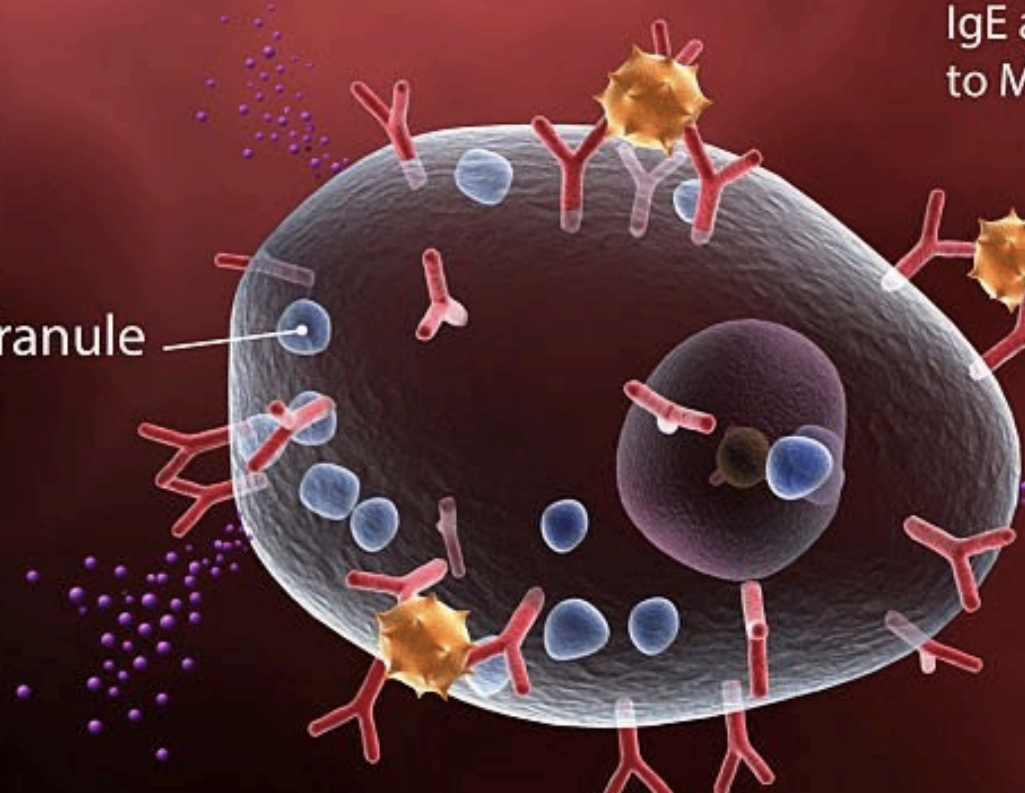


IgE

IgE attaching to Mast Cell



Granule

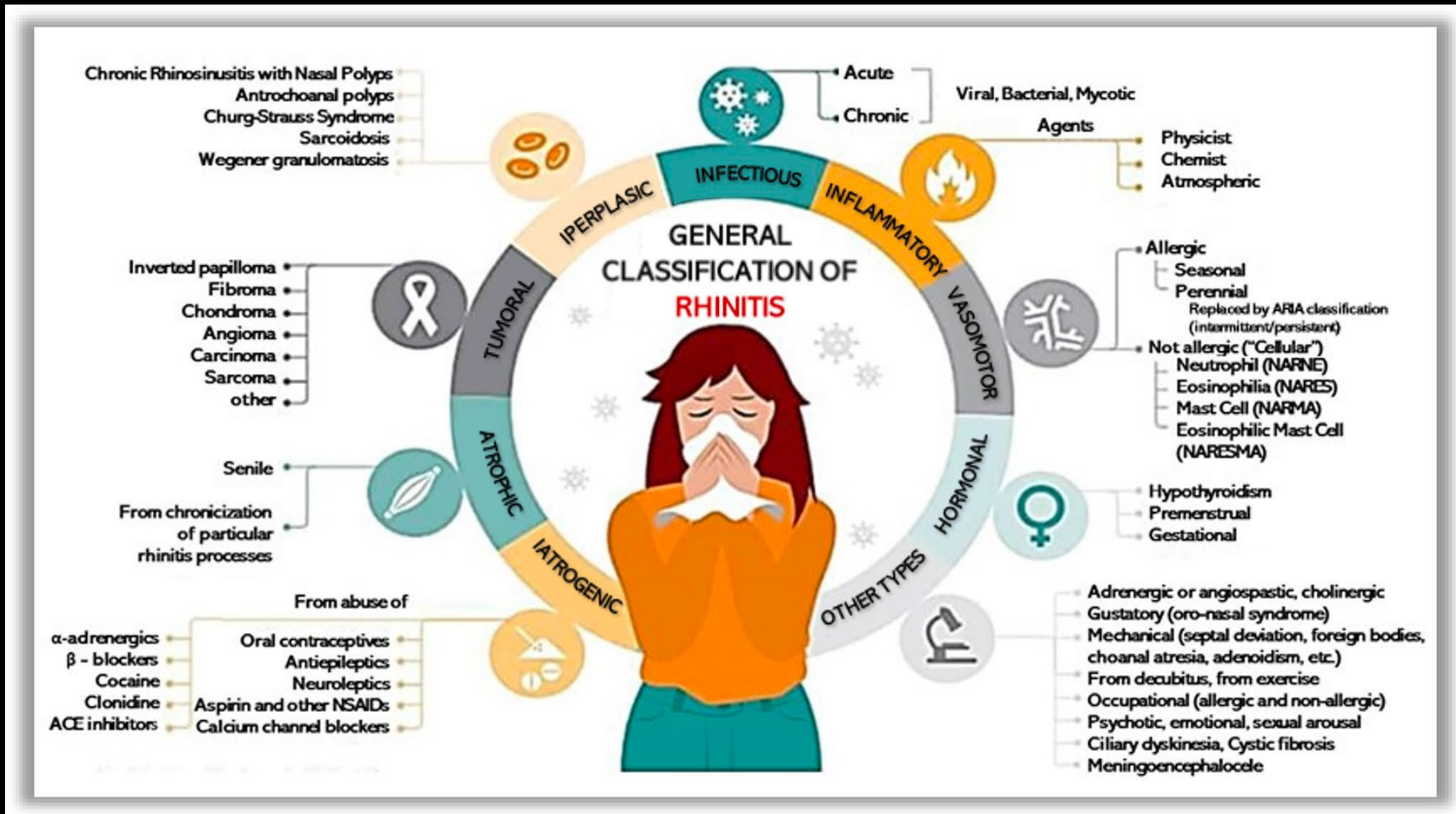


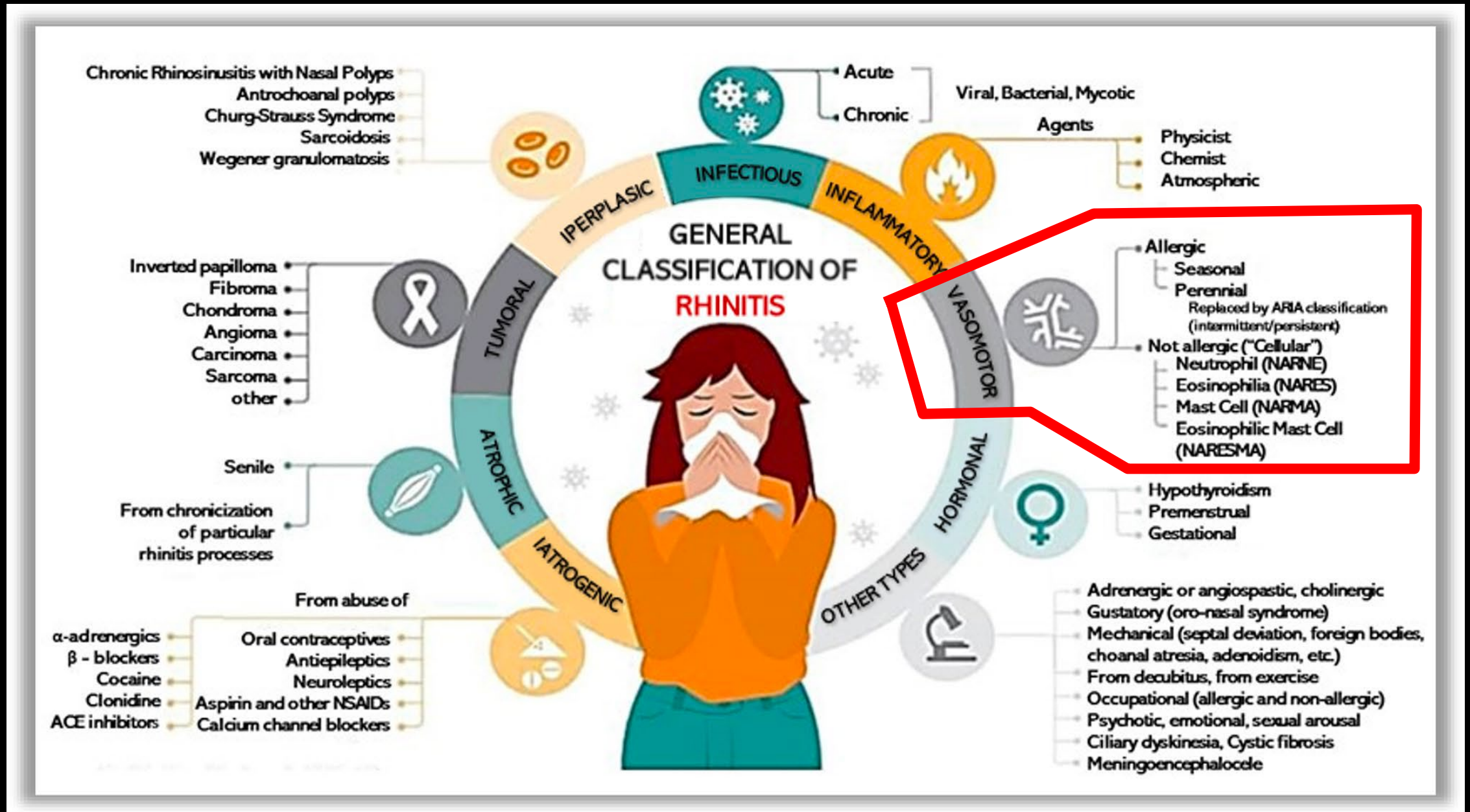
gettyimages®

Credit: Stocktrek Images

Histamines

Mast Cell Release Histamine

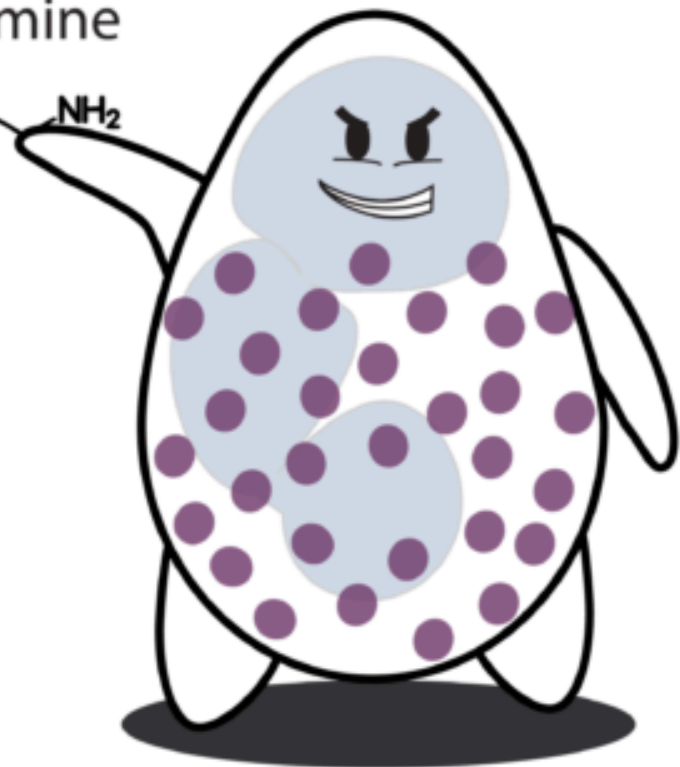
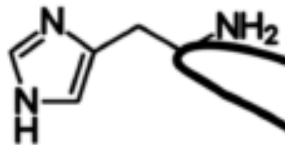




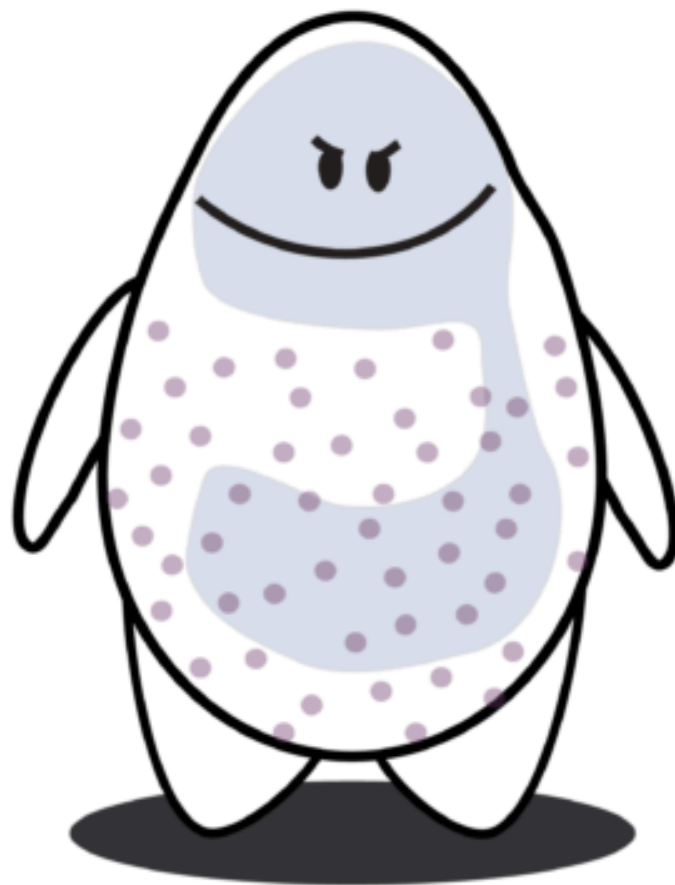
The Gran Team

Basophil

histamine



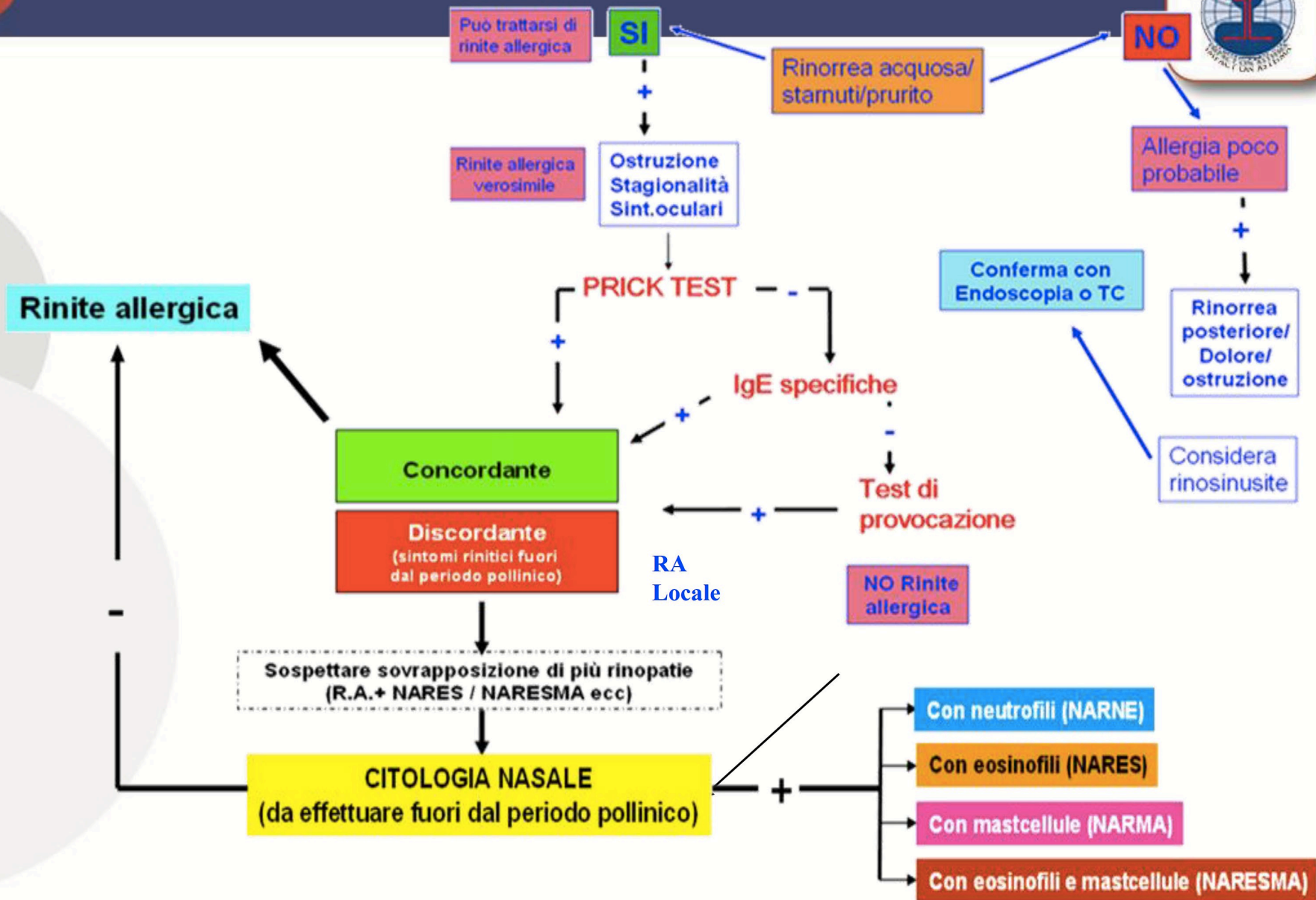
Eosinophil

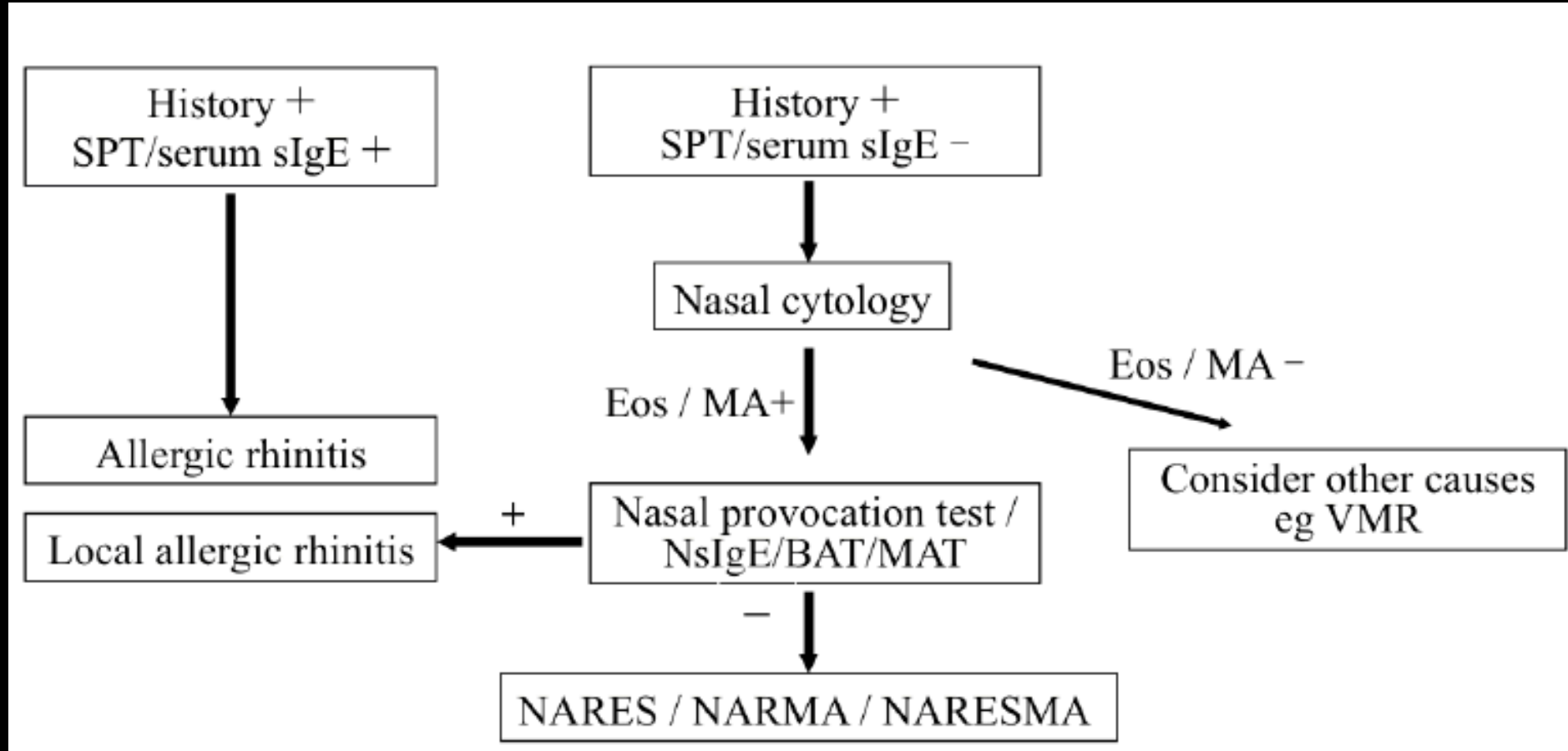


Neutrophil



ALGORITMO DIAGNOSTICO





Diagnostica base:

- Prick test
- IgE specifiche (estratti/molecole)
- Citologia Nasale

Procedure ulteriori

- Spirometria
- FeNO
- BAT

- **Acari dermatofagoidi**
- **Gatto**
- **Cane**
- **Alternaria**

- **Graminacee**
- **Cynodon (Erba canina)**
- **Parietaria**
- **Olivo**
- **Betulla**
- **Cipresso**
- **Assenzio (Artemisia)**
- **Ambrosia**

- *Latex*
- *Anisakis*
- *Altri pet*
- *Altre muffe*

- *Nocciola*
- *Arachide*
- *Noce*
- *Mandorla*
- *Pesca (LTP)*
- *Profilina*



**Prick test:
positività per gli alimenti nel lattante**



Confronto tra Prick-test e i test “*in vitro*”

Vantaggi degli Skin test

1. Meno costosi
2. Risultati subito
3. Più sensibili dei test *in vitro*
4. Risultati visibili dal paziente
⇒ maggior compliance nelle misure di controllo ambientale

Vantaggi delle IgEs

1. Non richiede conoscenza della tecnica degli Skin tests
2. Non richiede disponibilità di estratti allergenici
3. Non rischi di reazioni sistemiche
4. Effettuabile in pazienti in terapia o patologie cutanee









La «diagnosi per difetto»

(ovvero: non vi innamorate della diagnosi più facile)

CITOLOGIA NASALE



CAMPIONAMENTO

PROCESSAZIONE

OSSERVAZIONE

30'

Paziente maschio, 16 anni.

Rinite ostruttiva severa persistente.

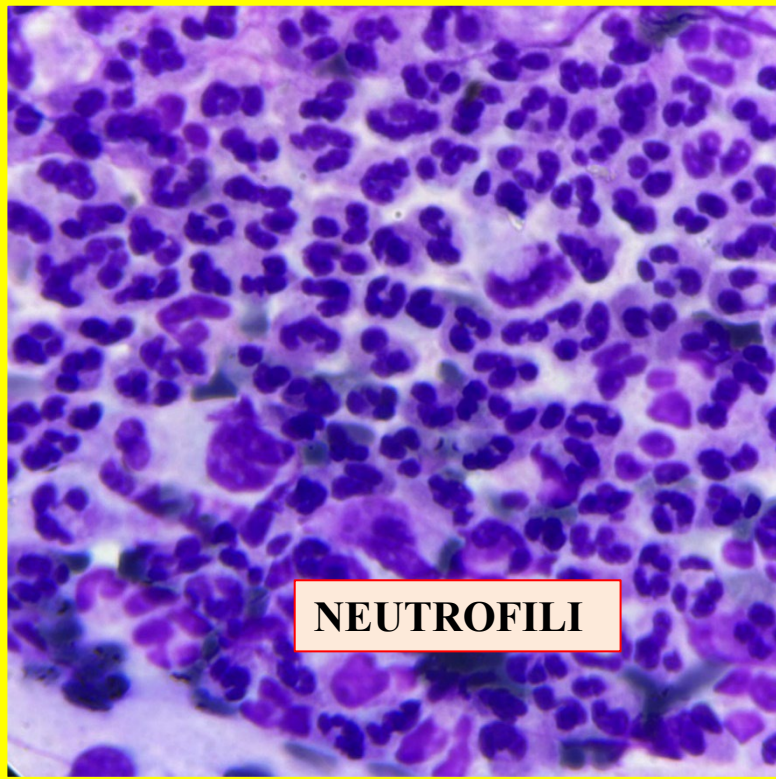
Anosmia.

Prick test:

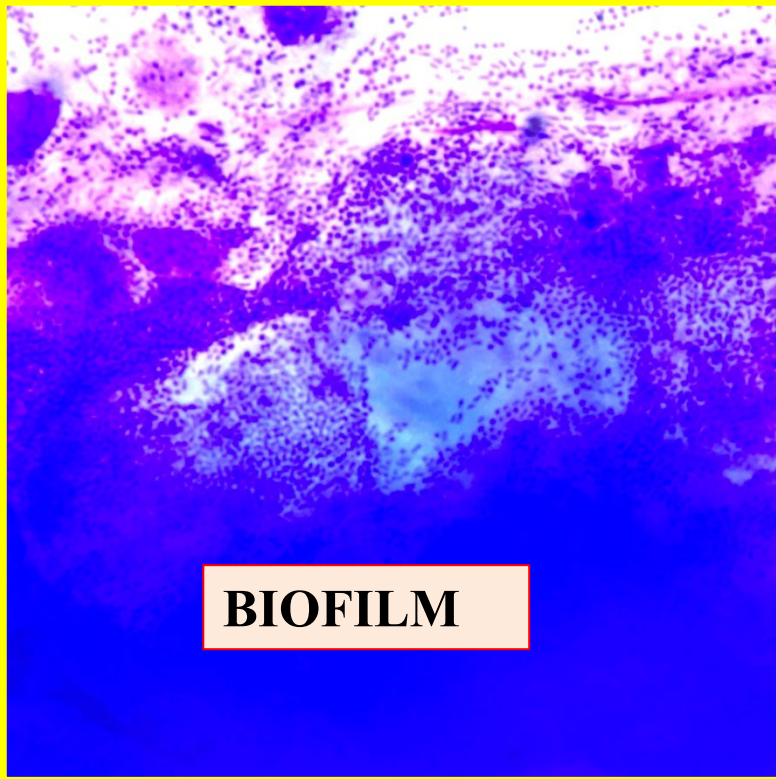
Acari 6 mm

Parietaria 8 mm

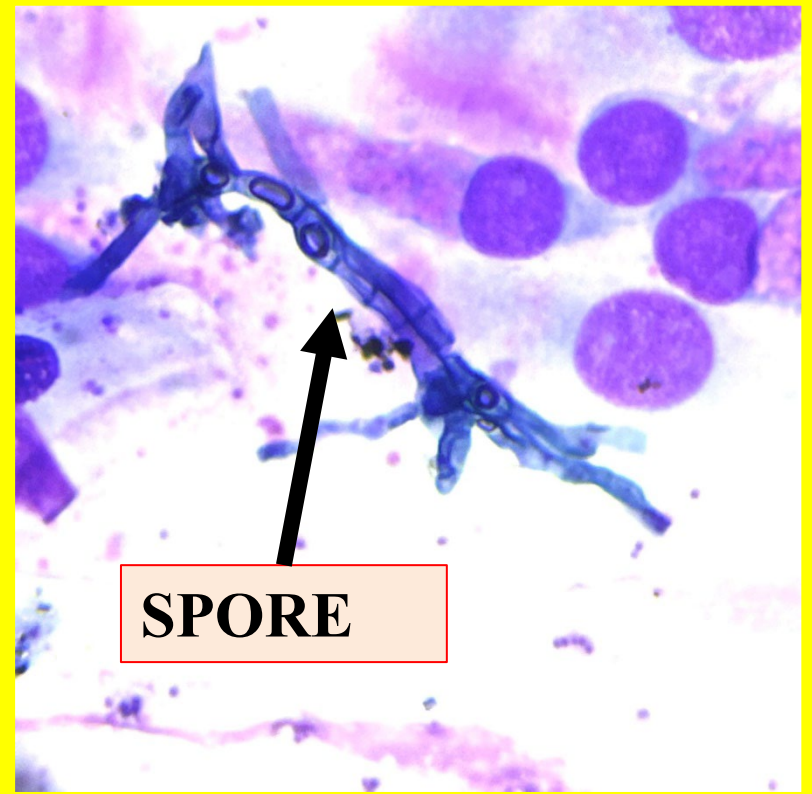
Alternaria 8 mm



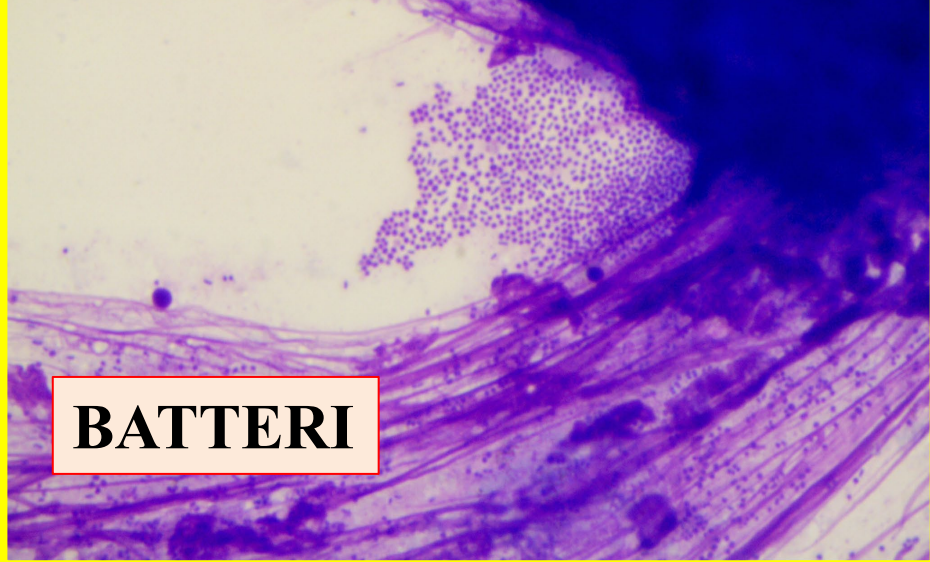
NEUTROFILI



BIOFILM



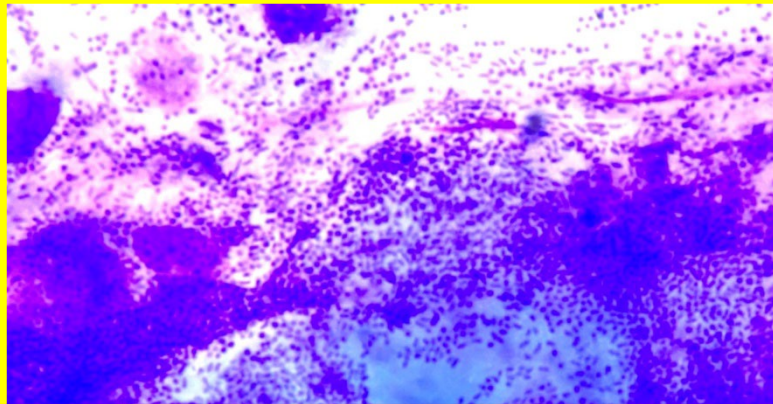
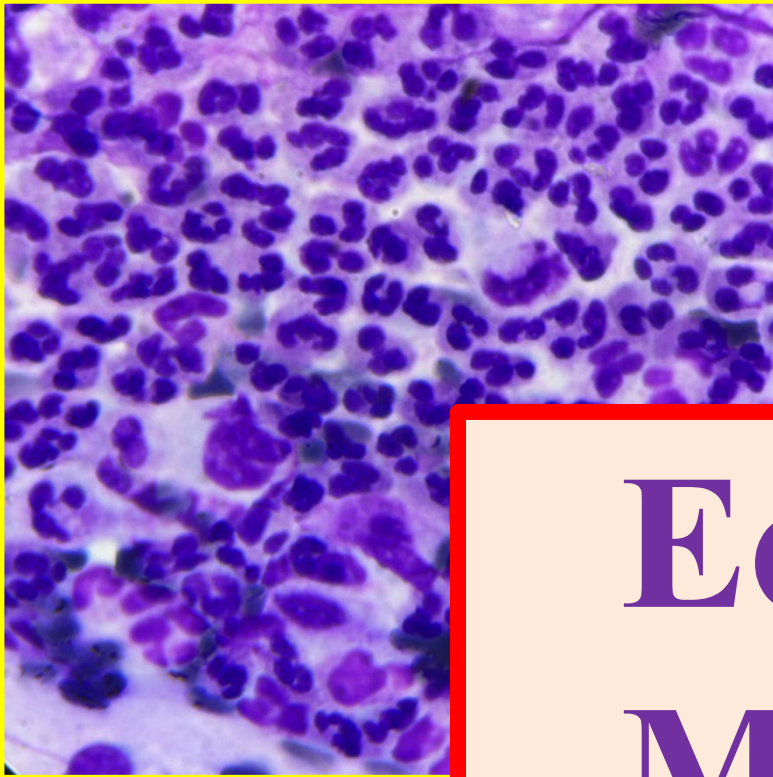
SPORE



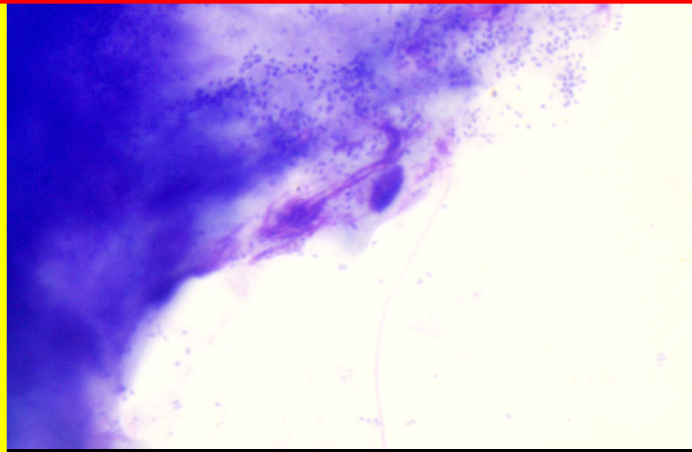
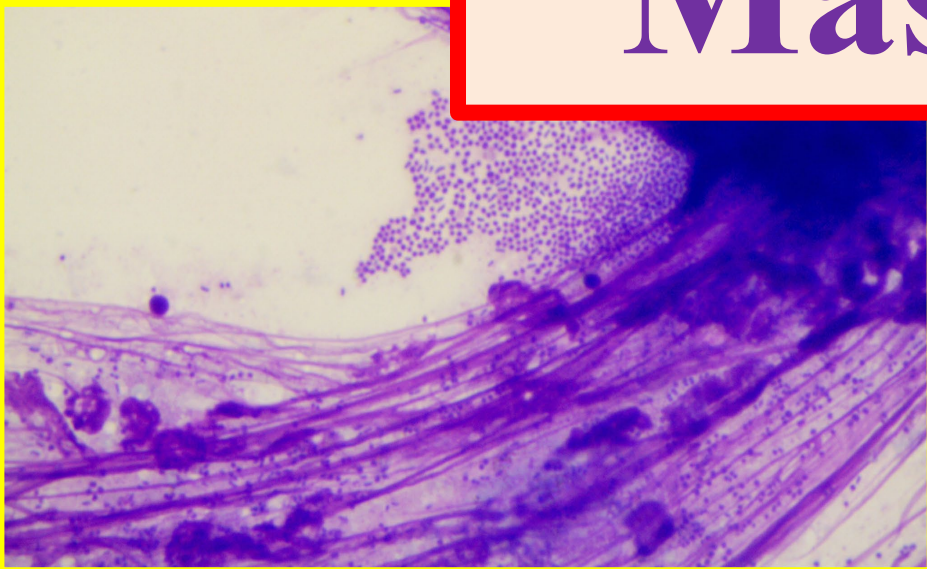
BATTERI

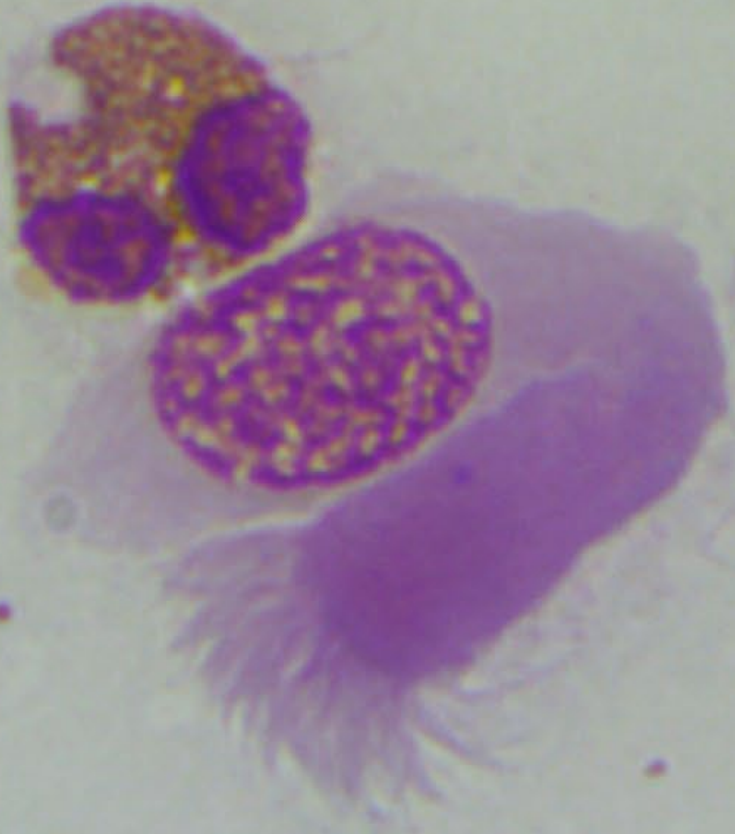


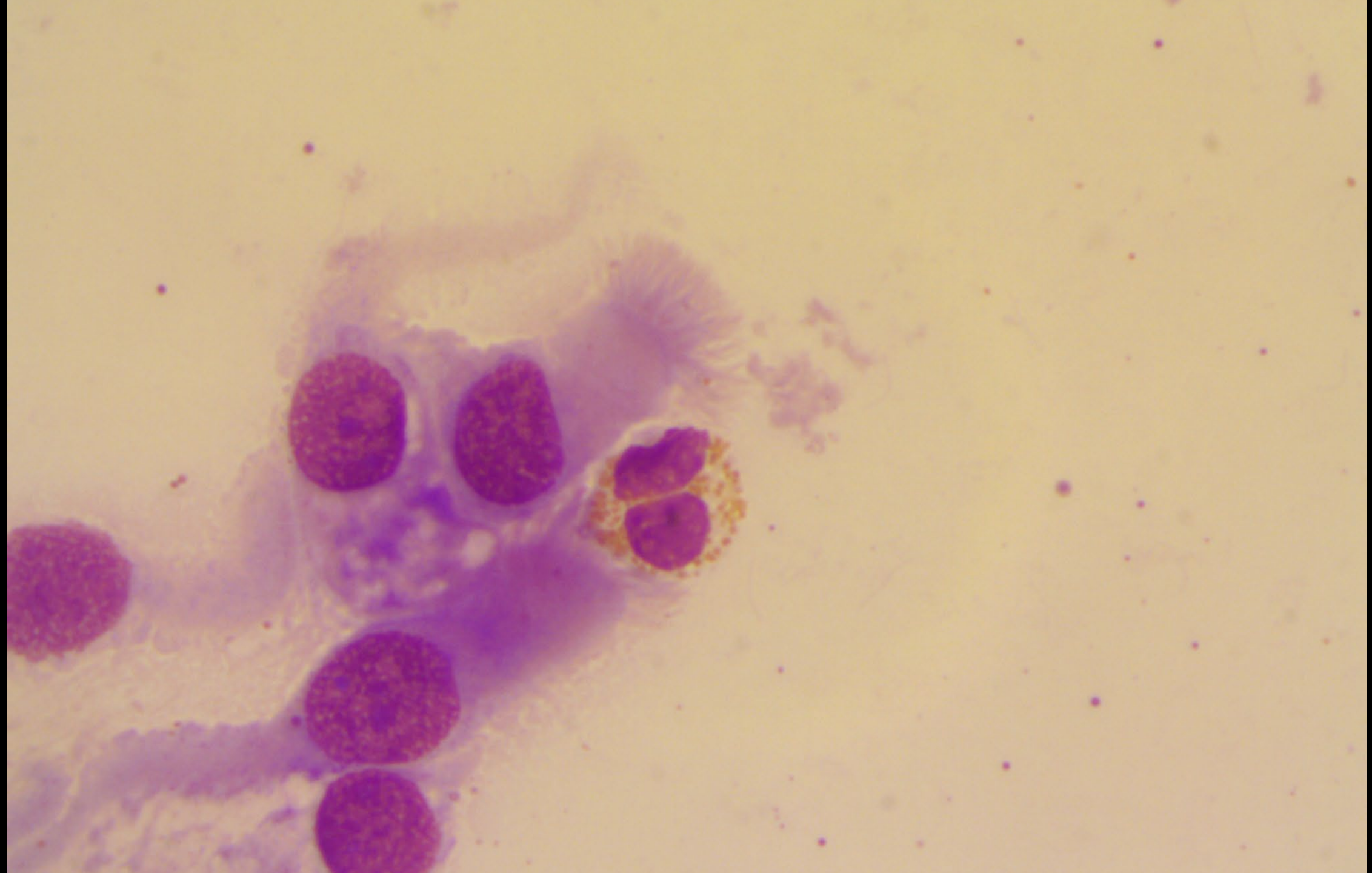
BIOFILM

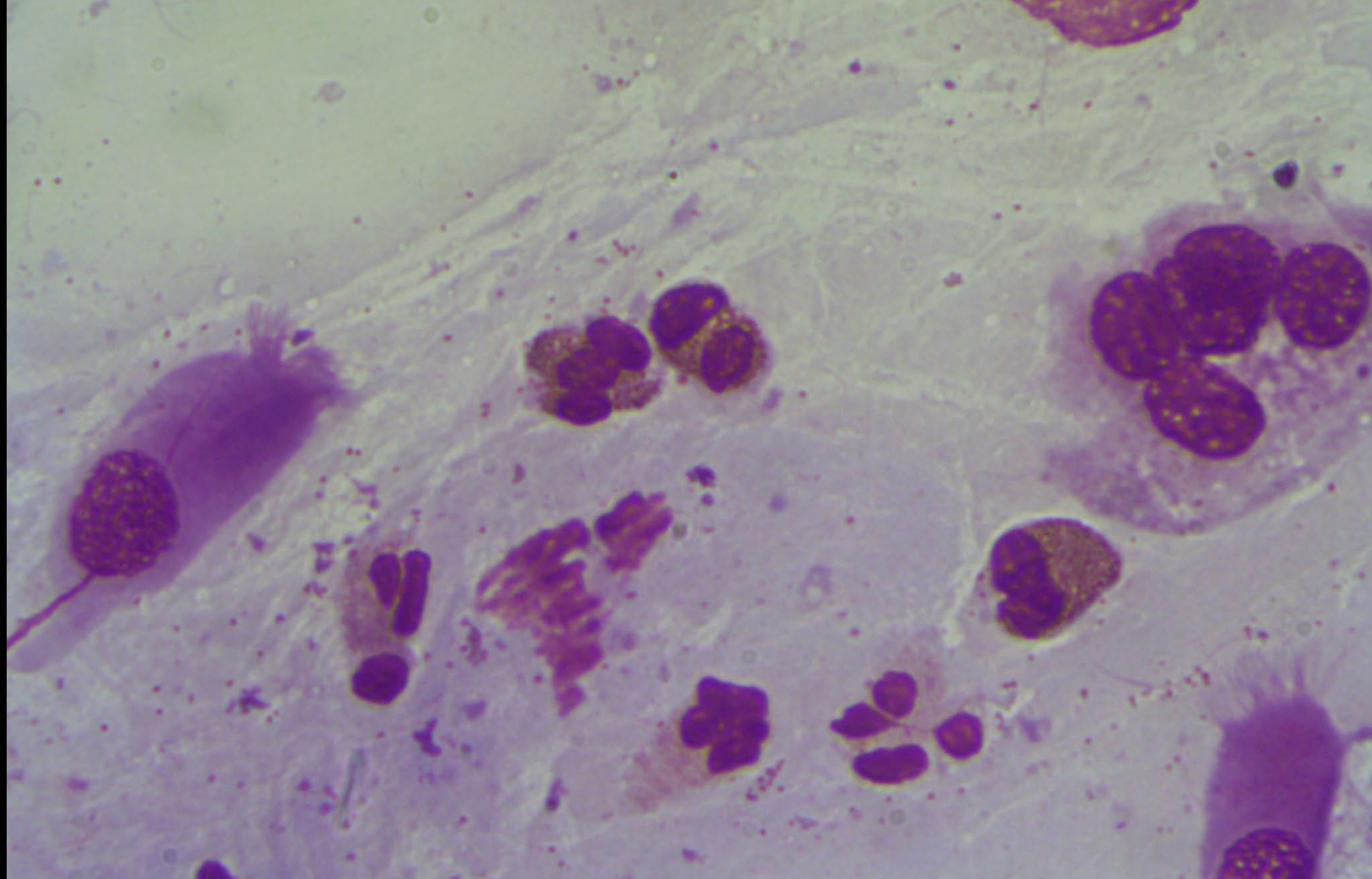


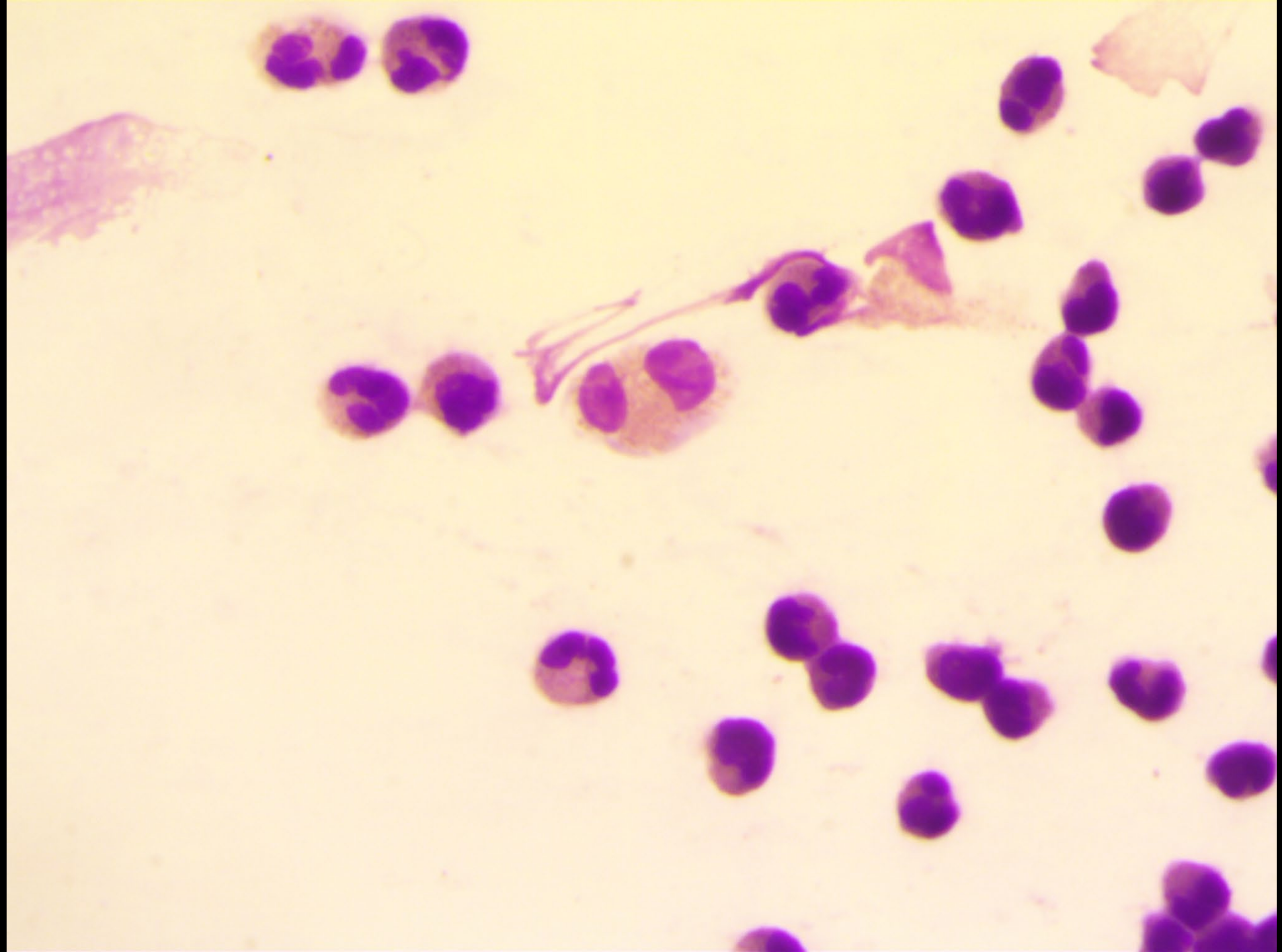
Eosinofili: zero
Mastociti : zero

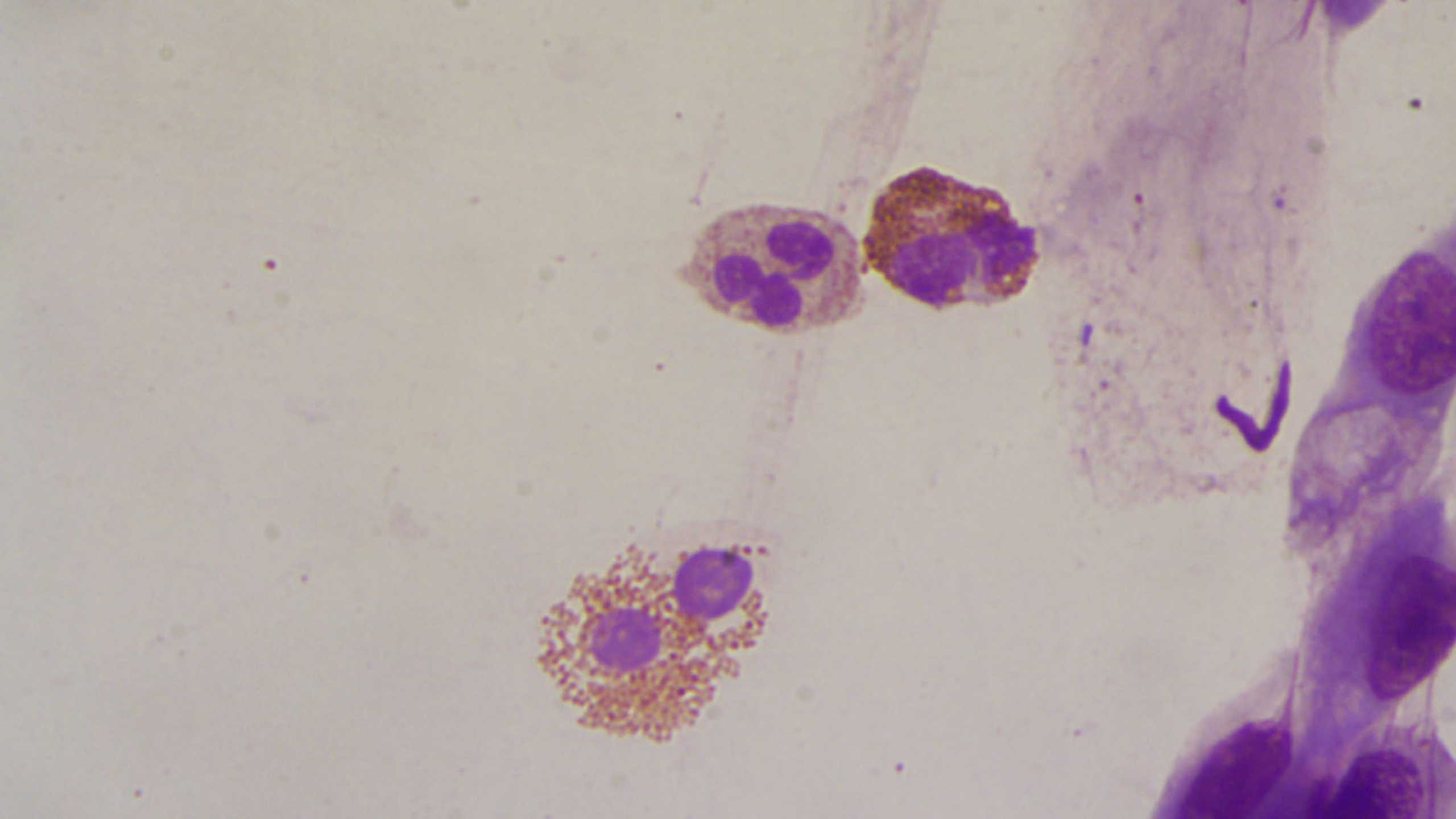


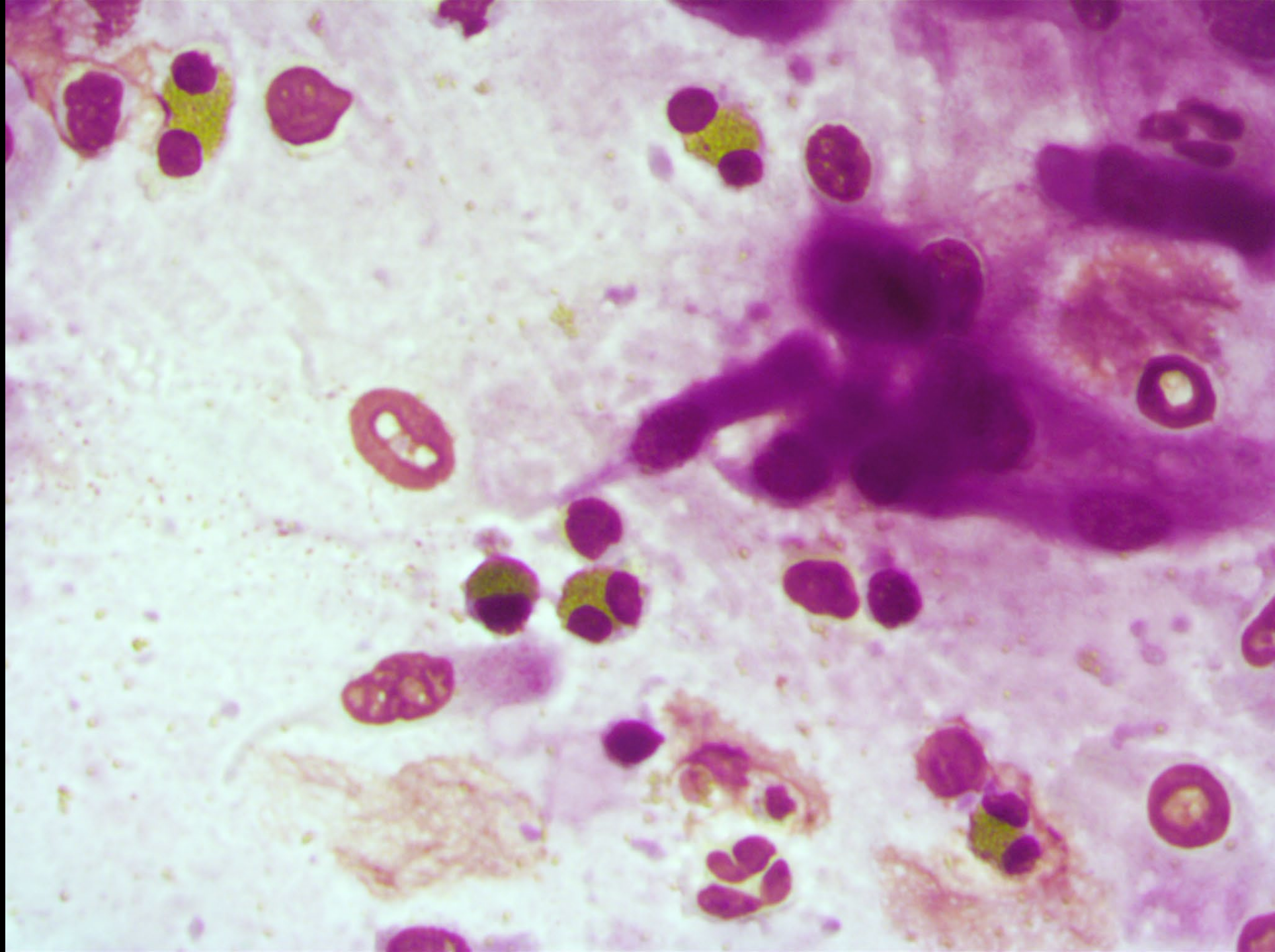


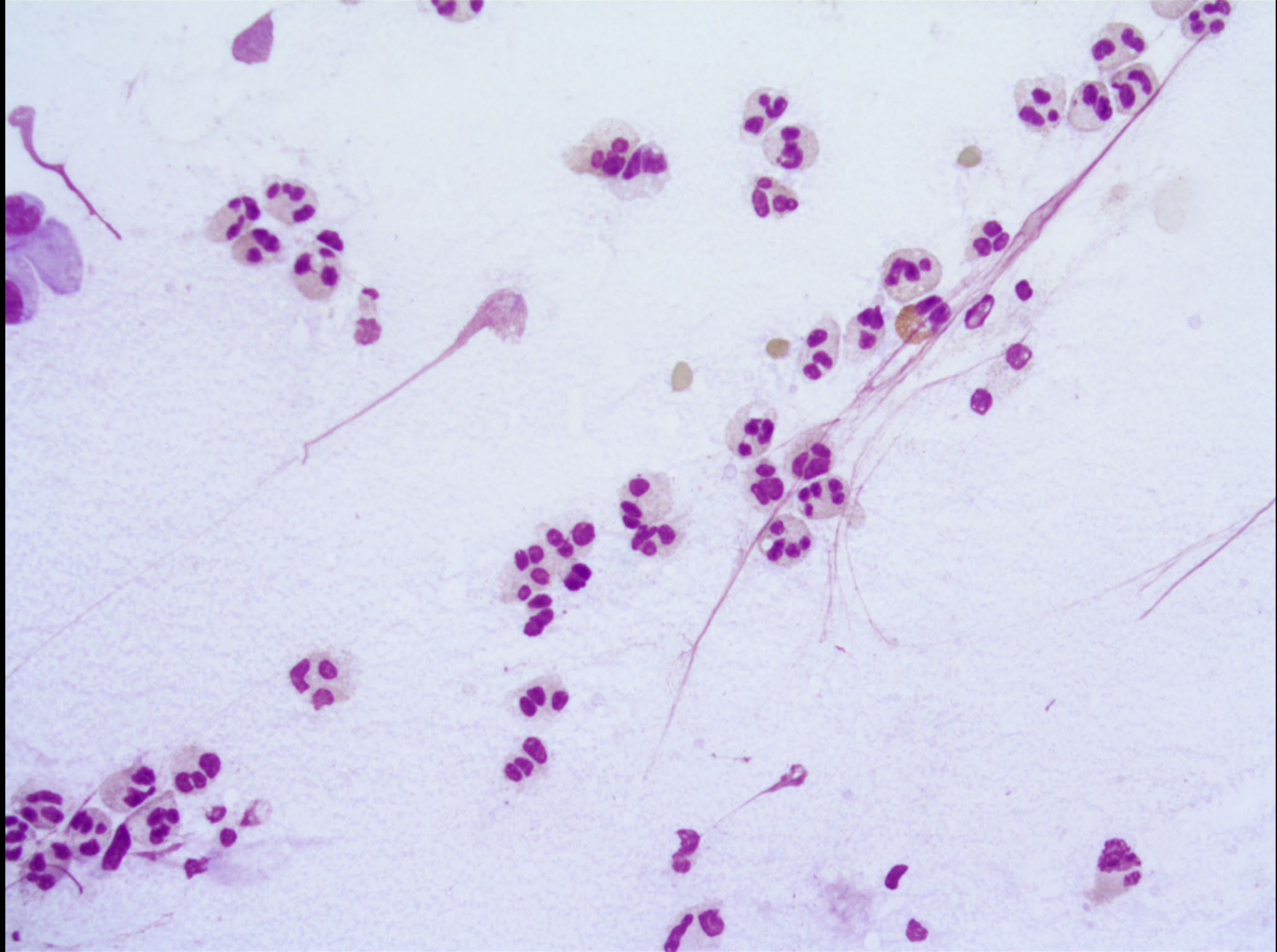


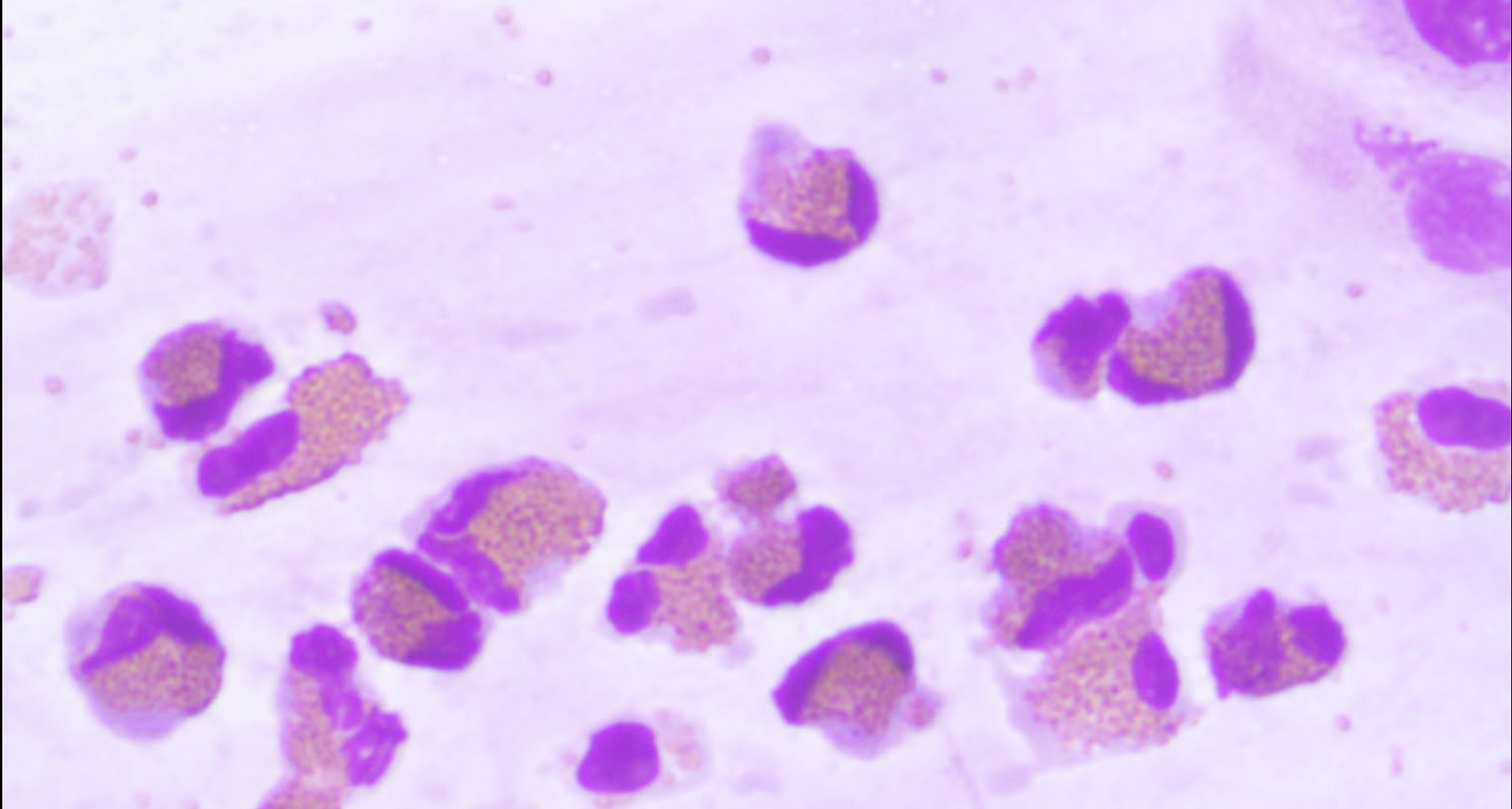




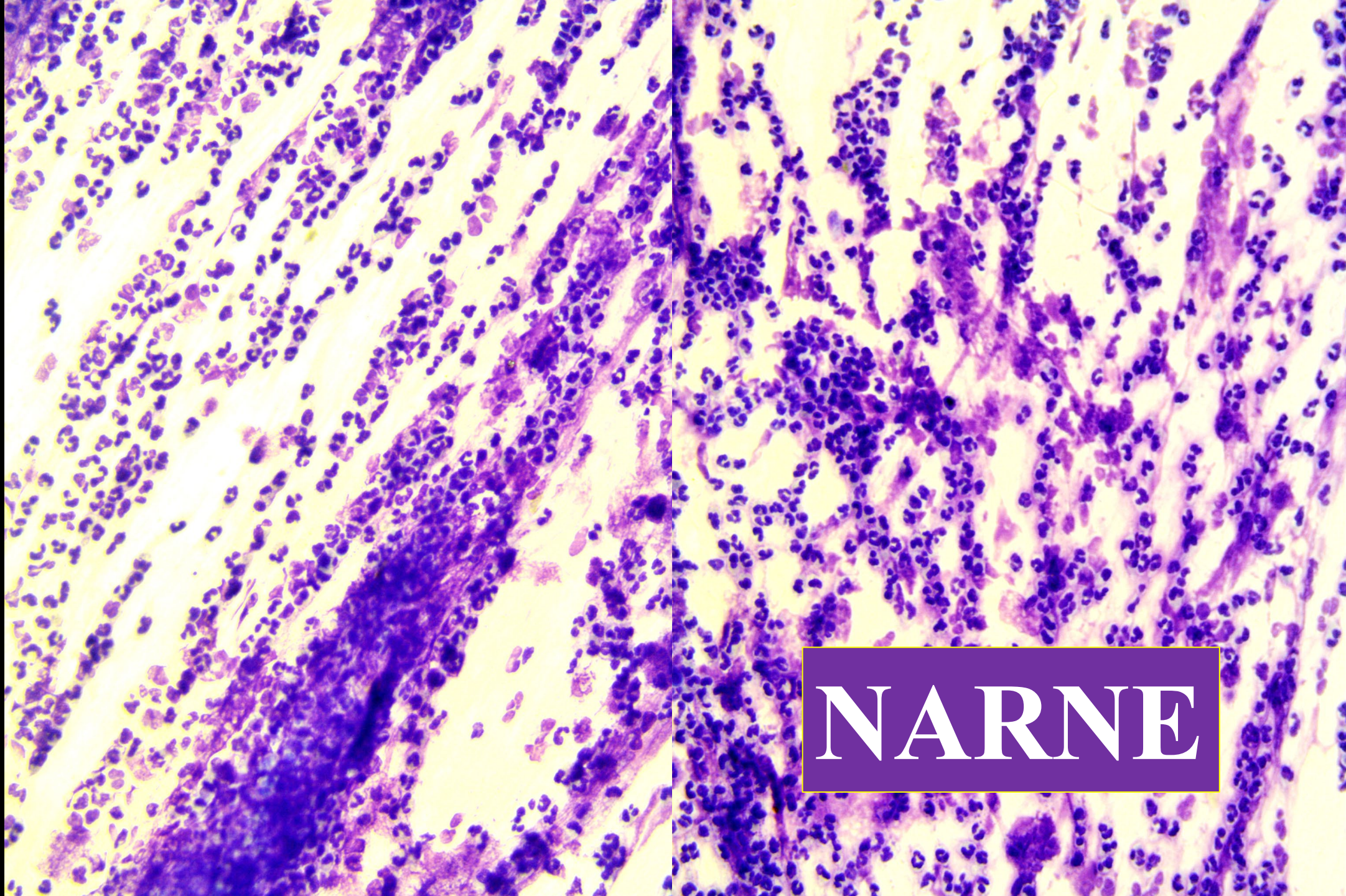




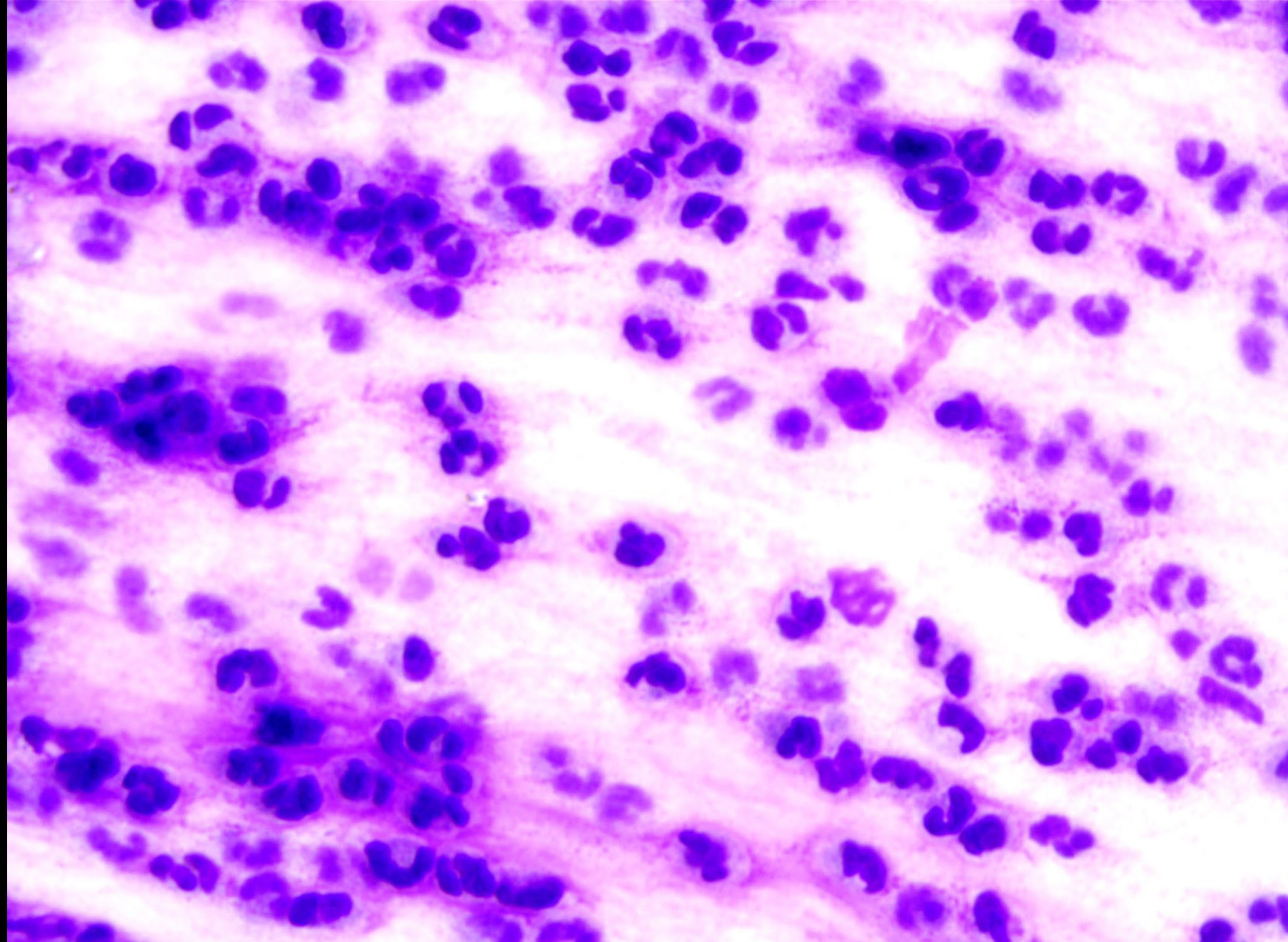


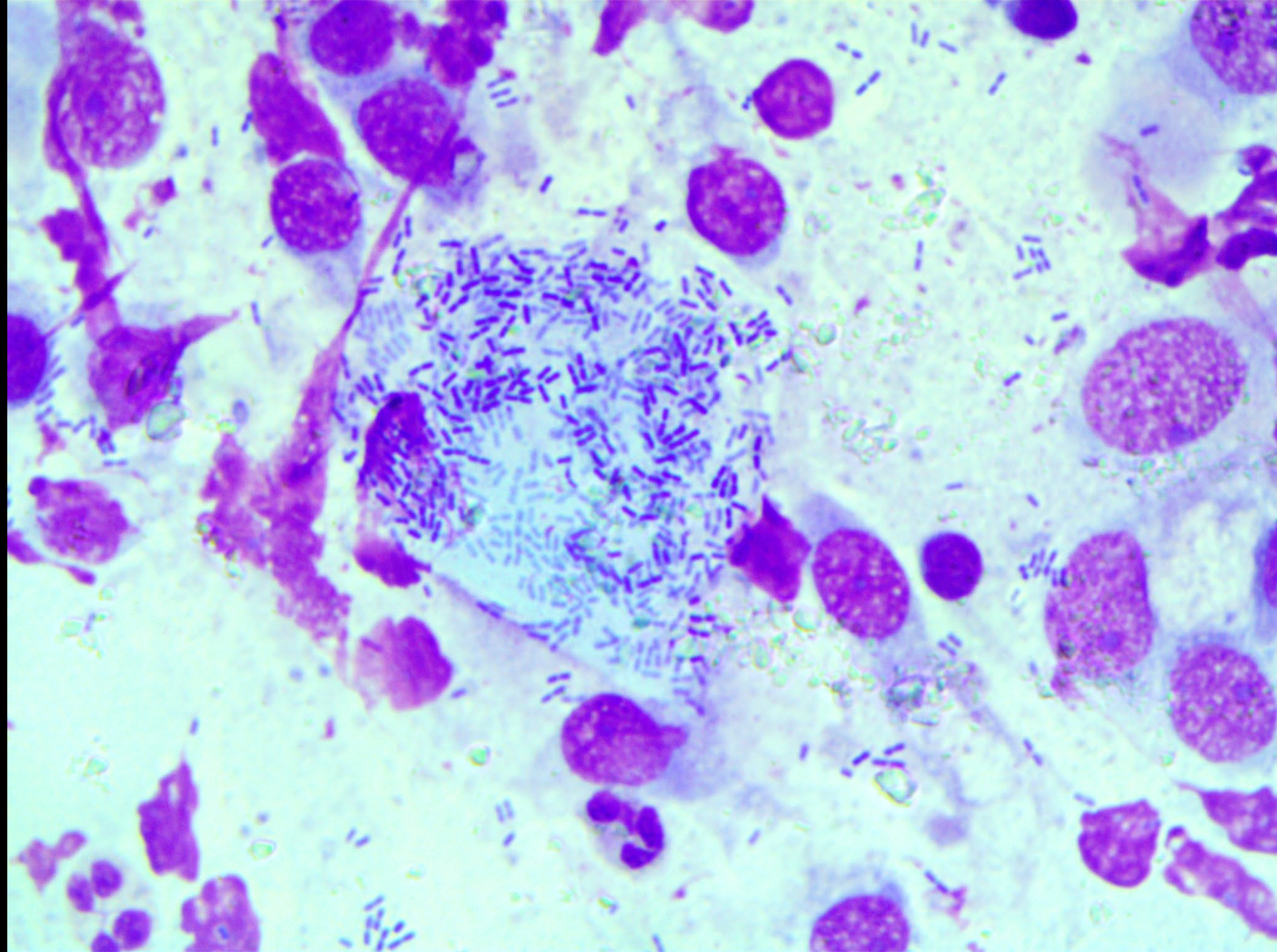


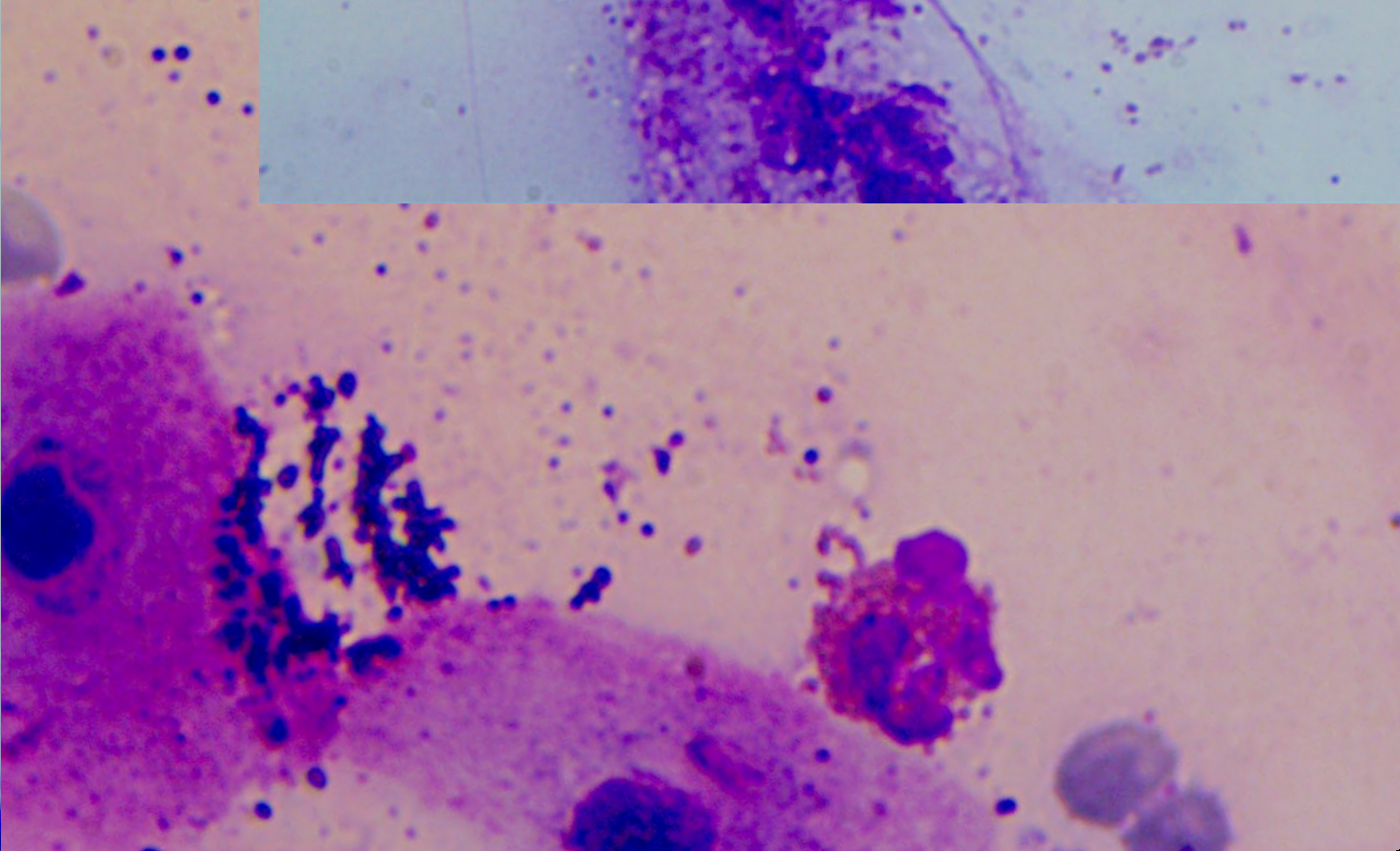
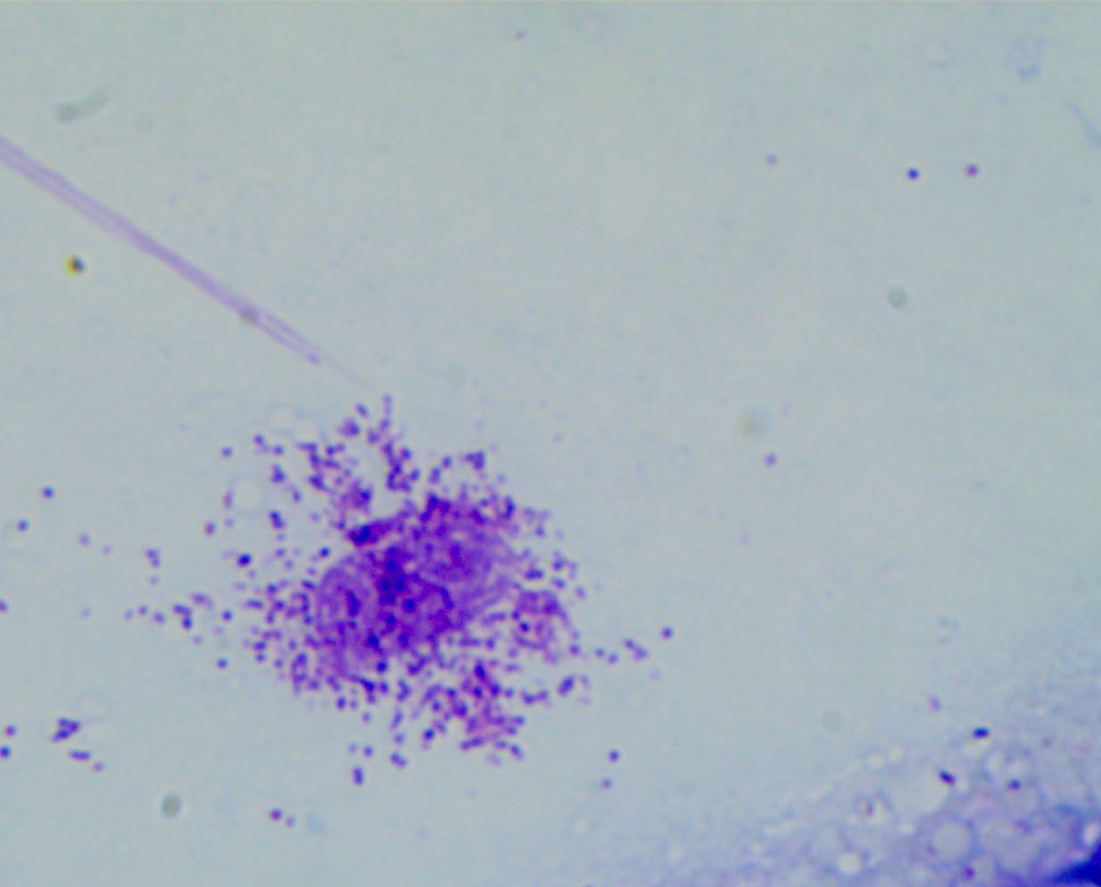
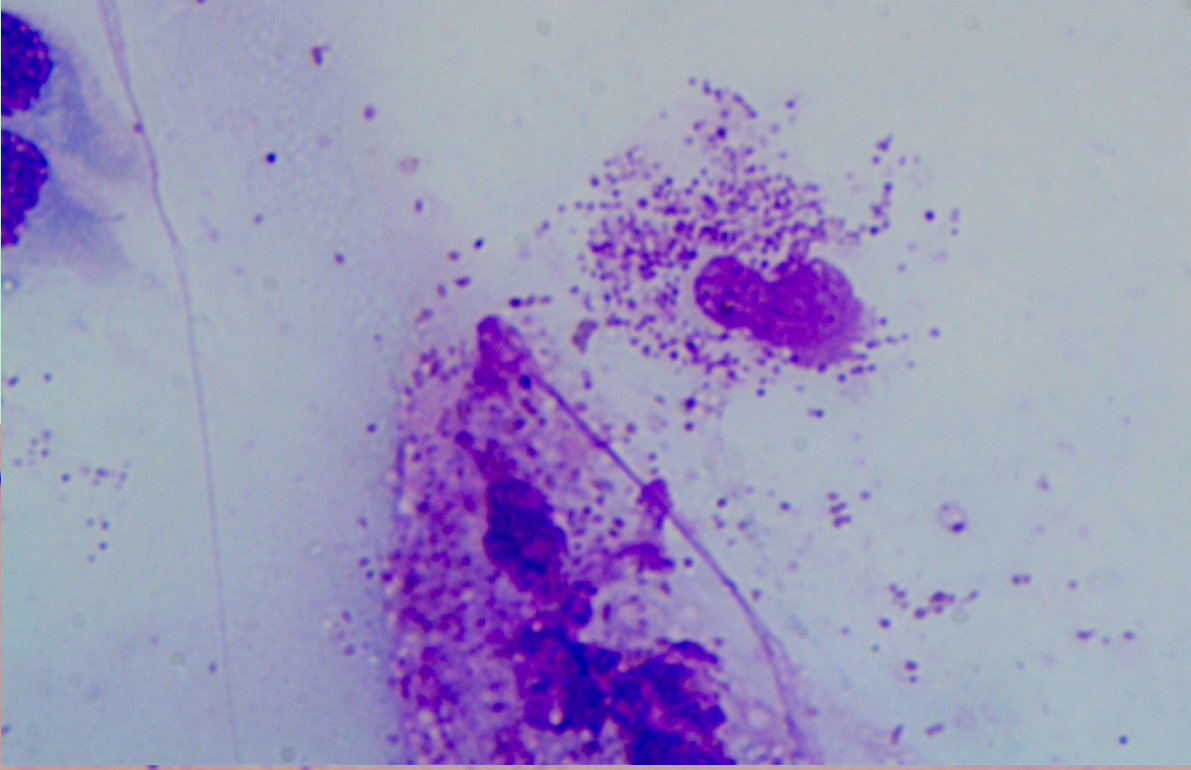
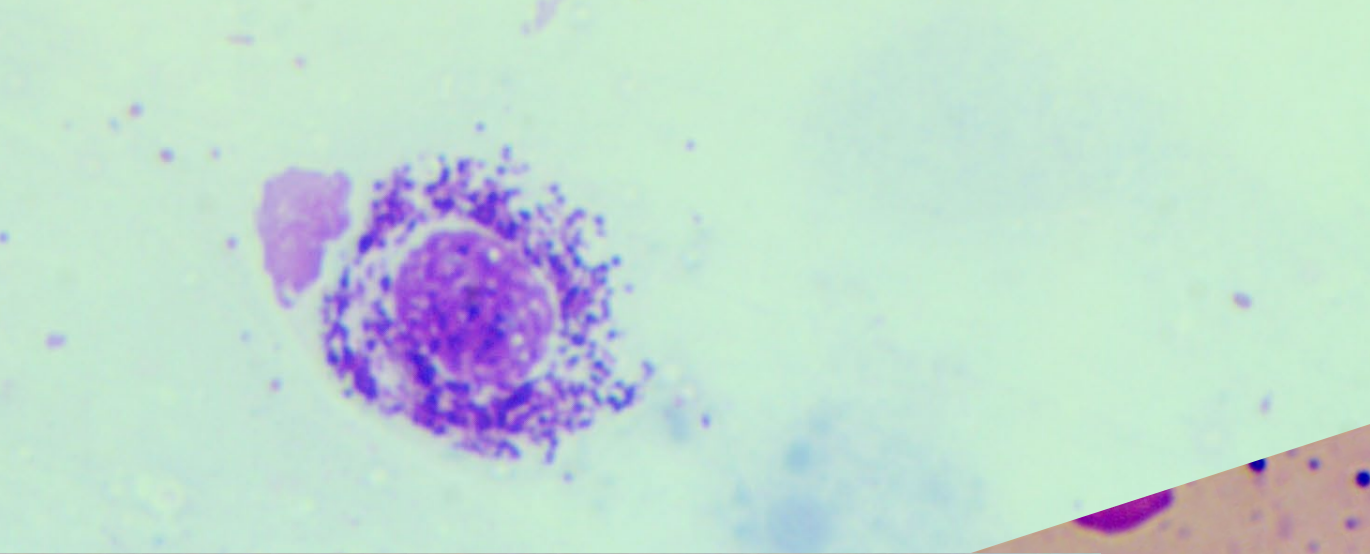
NARES



NARNE







Allergologia e Immunologia clinica
RINOCITOGRAMMA
dr. Guglielmo Scala

cognome nome **MARCO** nato il 22.12.15
mail

data prelievo 02.10.24

PRICK TEST posit monosens dubbi non fatti negativi

Dp Parietaria Lolium Composite Assenzio Cipresso Cladosporium Gatto Latex
 Df Graminacee Cynodon Artemisia Olivo Alternaria Cane Betulla Other...

sintomi nasali

ostruzione secrezione mucopurulenta rinorrea starnuti prurito ipo/anosmia secchezza poliposi

tecnica di prelievo

colorazione

cellule ciliate

mastociti

cellule caliciformi mucipare

linfociti

neutrofili

batteri

eosinofili

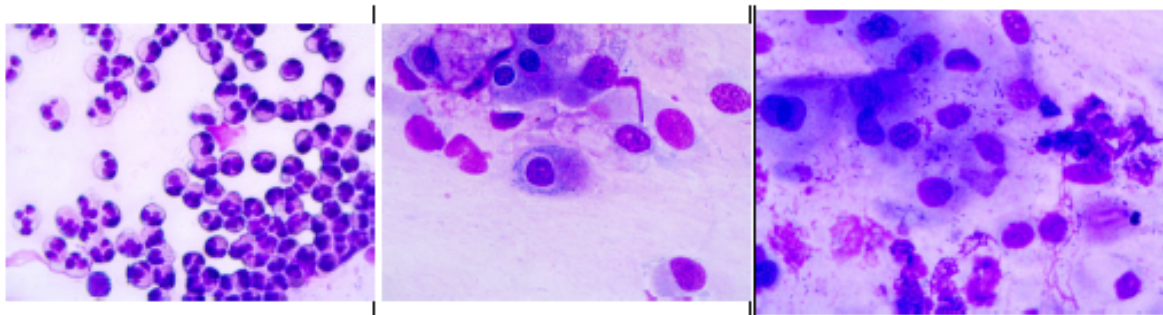
spore

legenda

0 non visti
+ rare
++ alcuni
+++ numerosi
++++ numerosissimi

conclusioni:

Sofferenza diffusa del comparto epiteliale (ciliocitolforia).
Alterazione del rapporto ciliate/mucipare.
Notevole presenza batterica con organizzazione in biofilm con consensuale infiltrazione neutrofila.
Quadro compatibile con rinosinusite cronica.
Da rivalutare nel tempo dopo terapia



Allergologia e Immunologia clinica
RINOCITOGRAMMA
dr. Guglielmo Scala

cognome nome **MARTINA** nato il 30.10.10
mail

data prelievo 28.01.23

PRICK TEST posit monosens dubbi non fatti negativi

Dp Parietaria Lolium Composite Assenzio Cipresso Cladosporium Gatto Latex
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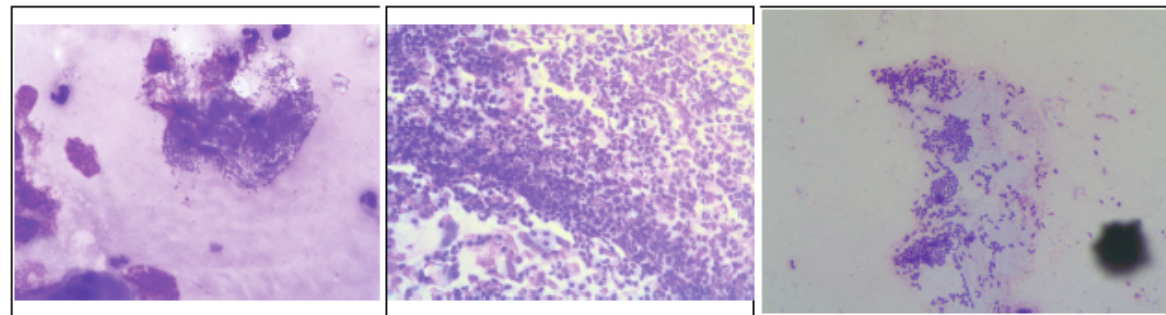
spore

legenda

0 non visti
+ rare
++ alcuni
+++ numerosi
++++ numerosissimi

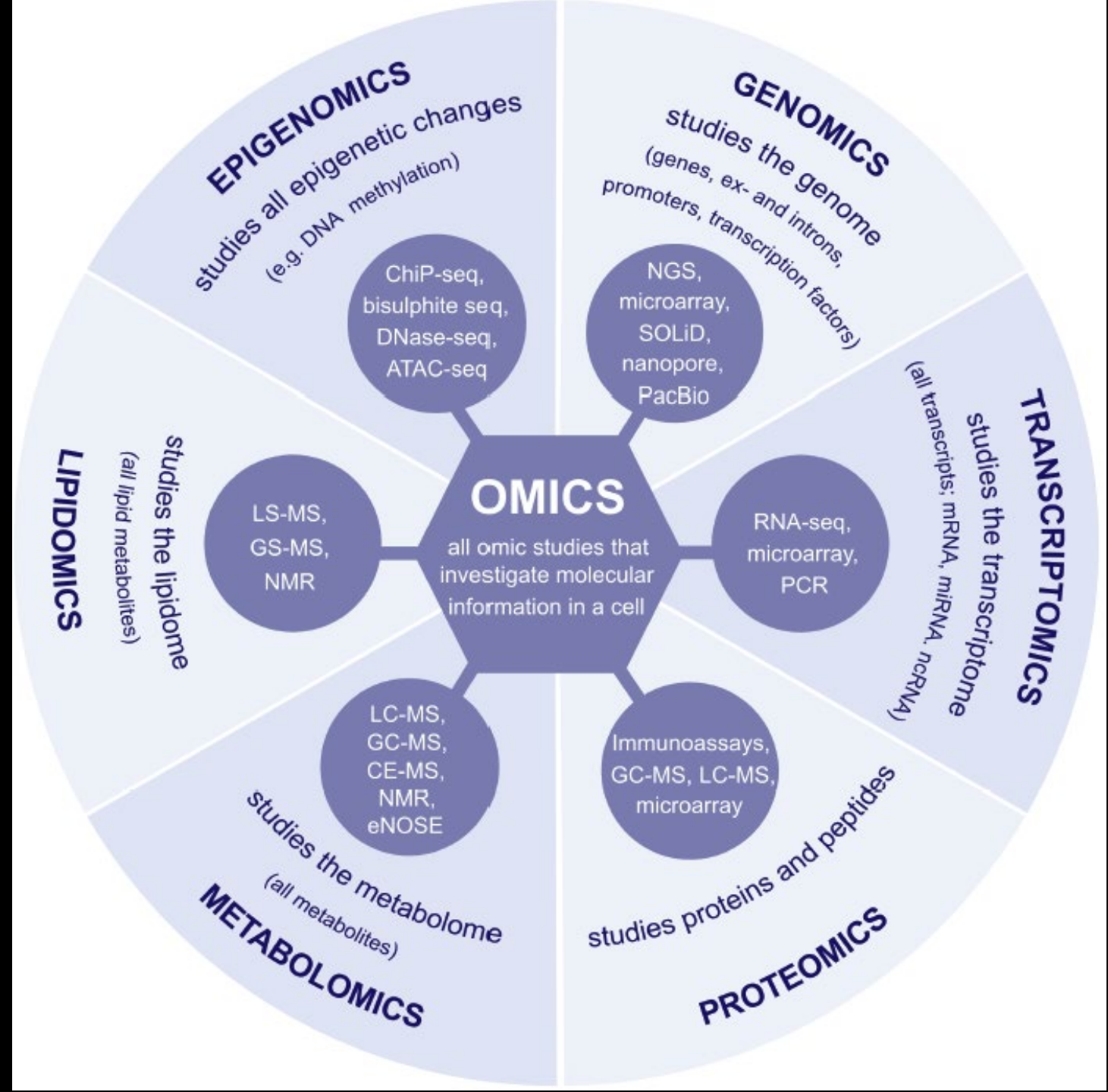
conclusioni:

diffusa sofferenza del comparto epiteliale.
Notevole infiltrazione neutrofila (a tappeto) con presenza di batteri organizzati in biofilm.
Quadro di rinosinusite batterica cronica



Le nuove frontiere

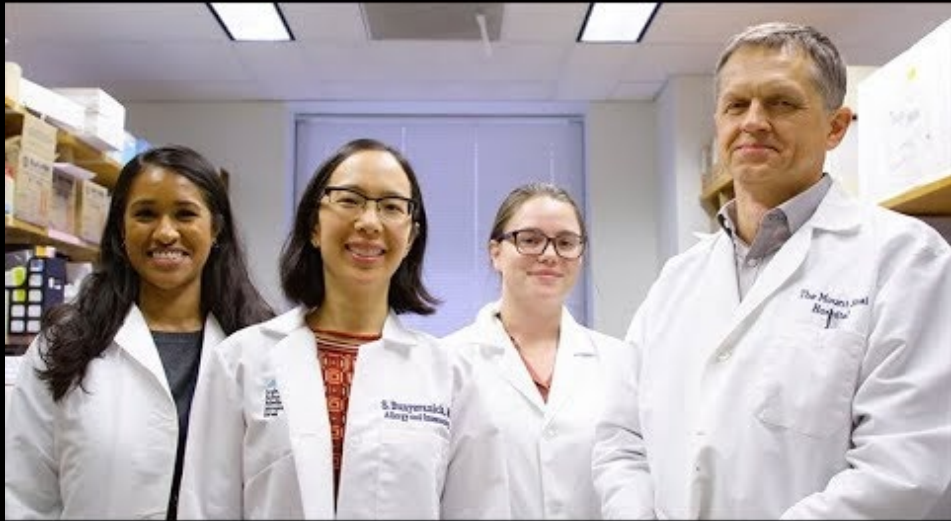
- La trascrittomica
- Il microbioma
- L'epigenetica



Network study of nasal transcriptome profiles reveals master regulator genes of asthma

Check for updates

Anh N. Do, PhD,^{a,b} Yoojin Chun, MS,^{a,b} Galina Grishina, MS,^c Alexander Grishin, PhD,^c Angela J. Rogers, MD, MPH,^d Benjamin A. Raby, MD, MPH,^e Scott T. Weiss, MD, MS,^{f,g} Alfin Vicencio, MD,^h Eric E. Schadt, PhD,^{a,b} and Supinda Bunyavanich, MD, MPH, MPhil^{a,b,c} *New York, NY, Stanford, Calif, and Boston, Mass*



2021

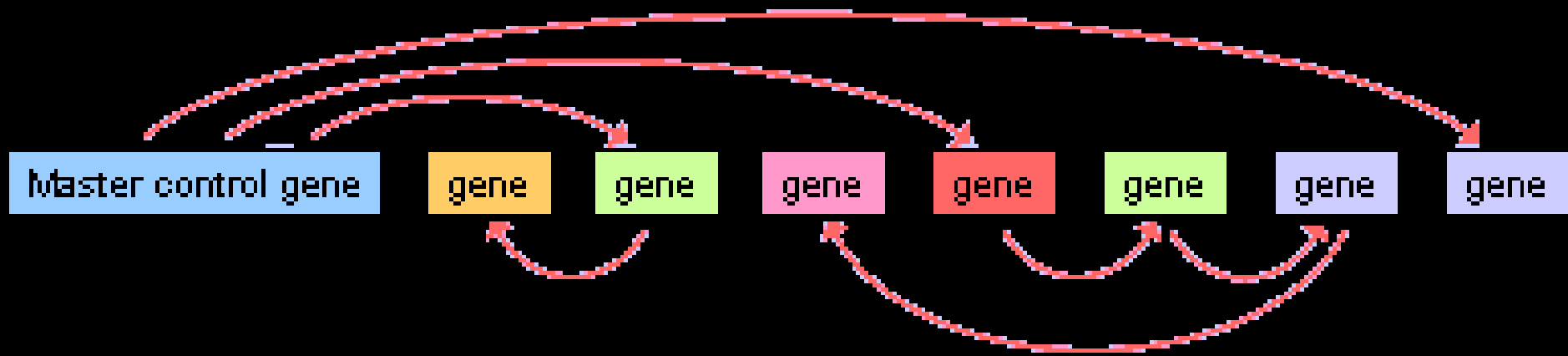
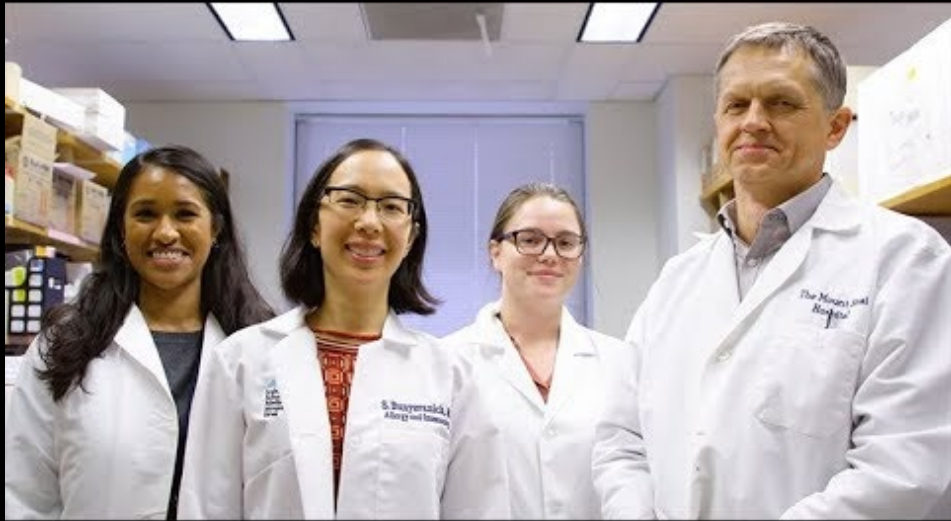


Network study of nasal transcriptome profiles reveals master regulator genes of asthma

Check for updates

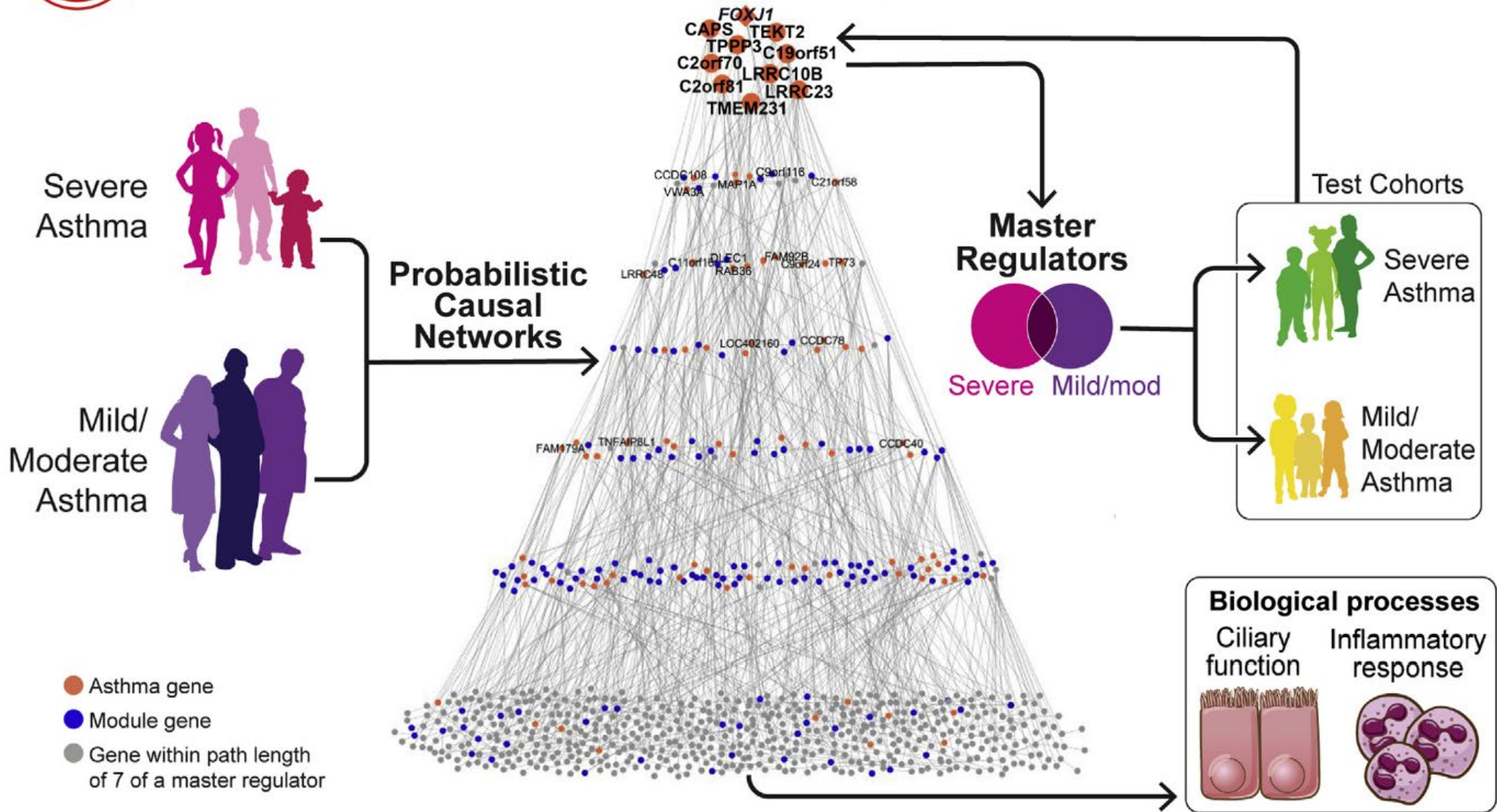
Anh N. Do, PhD,^{a,b} Yoojin Chun, MS,^{a,b} Galina Grishina, MS,^c Alexander Grishin, PhD,^c Angela J. Rogers, MD, MPH,^d Benjamin A. Raby, MD, MPH,^e Scott T. Weiss, MD, MS,^{f,g} Alfin Vicencio, MD,^h Eric E. Schadt, PhD,^{a,b} and Supinda Bunyavanich, MD, MPH, MPhil^{a,b,c} *New York, NY, Stanford, Calif, and Boston, Mass*

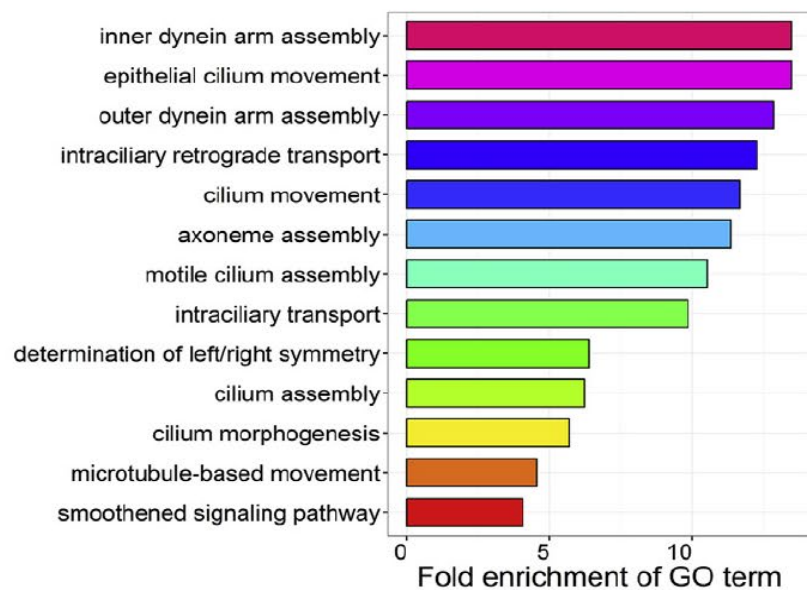
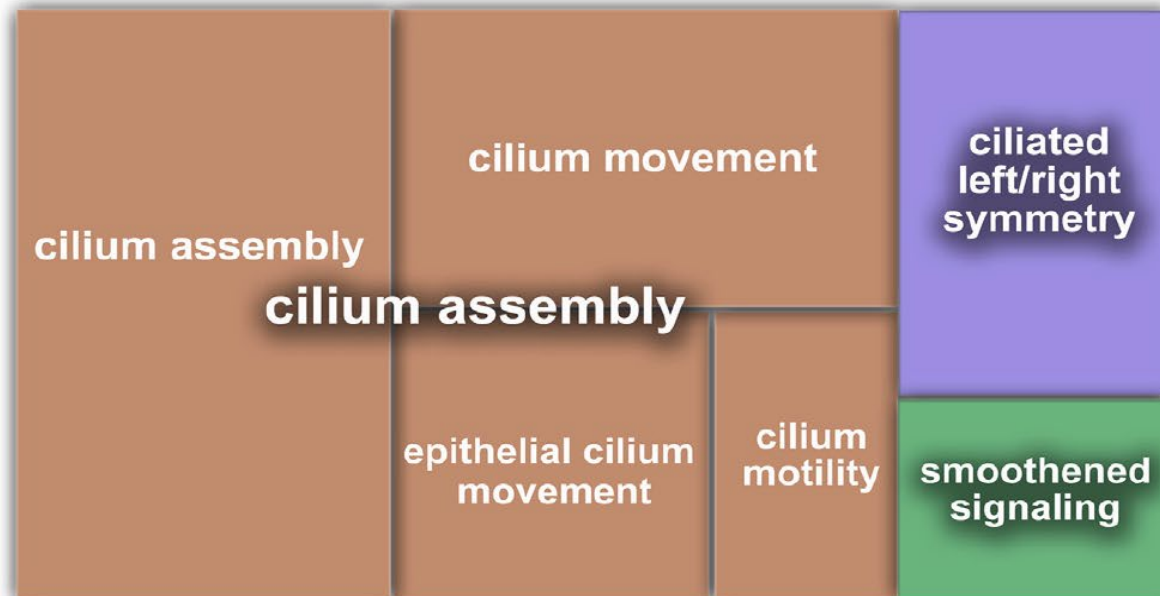
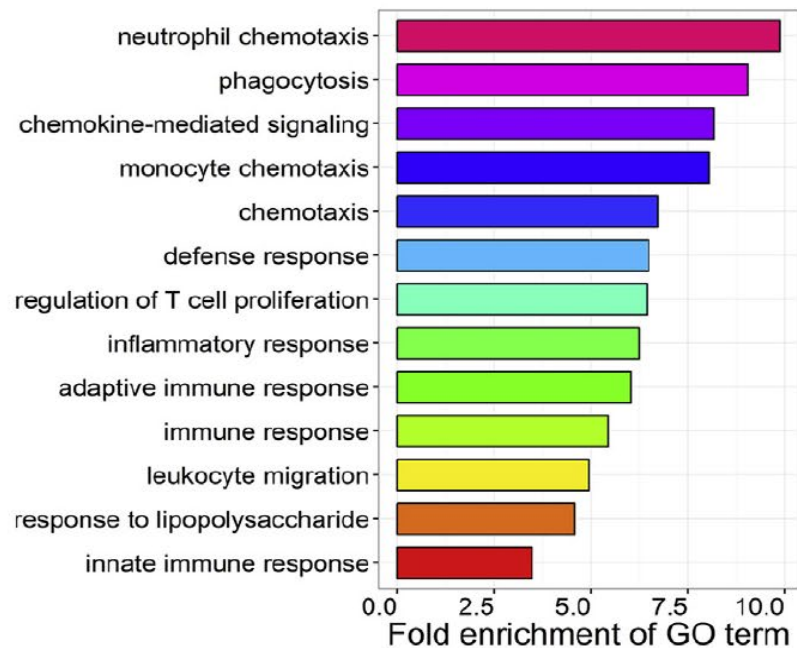
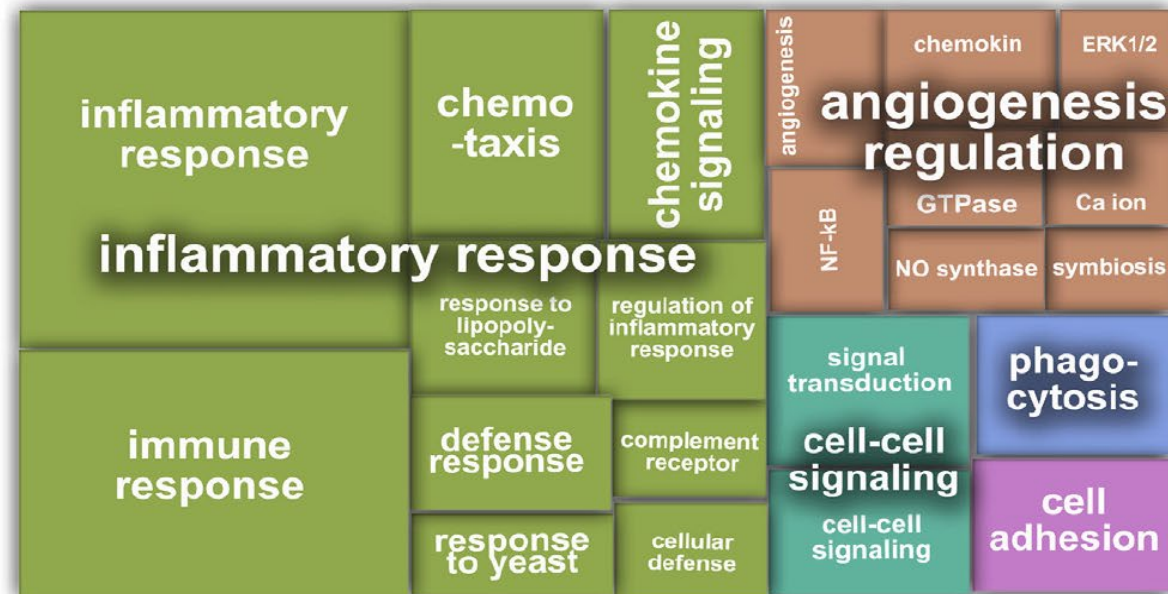
2021





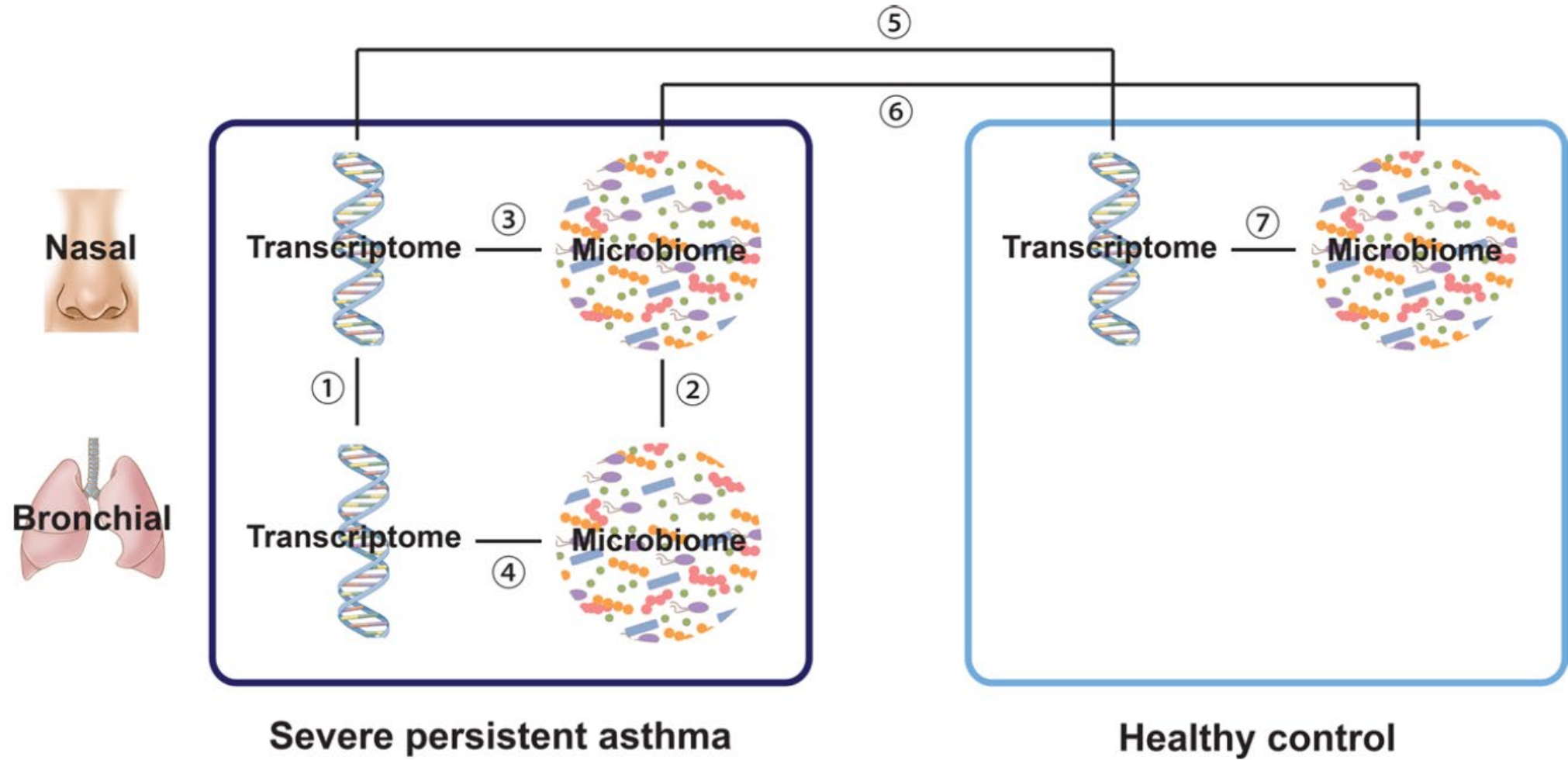
Network study of nasal transcriptome profiles reveals master regulator genes of asthma



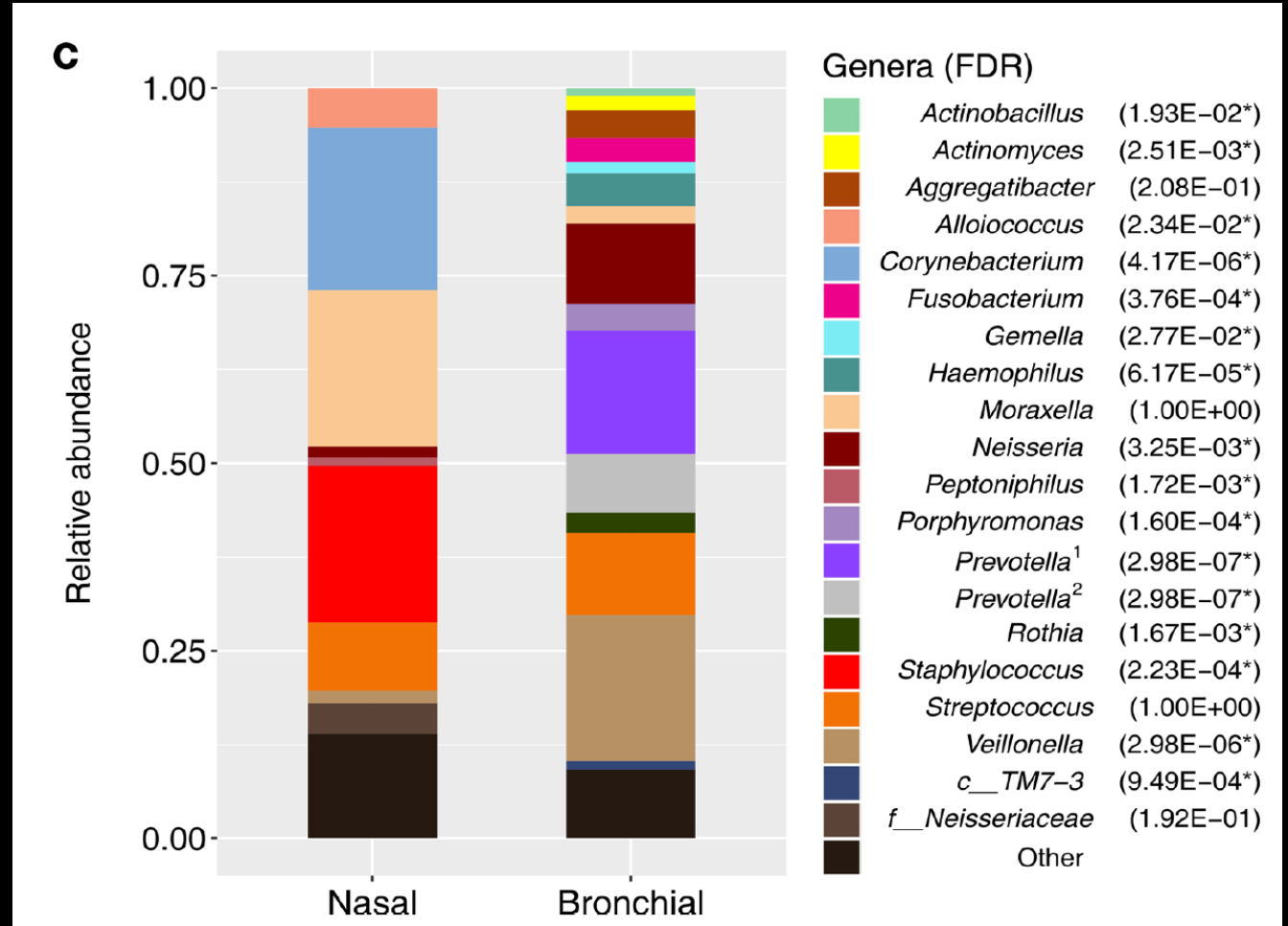
C**D****E****F**

Key messages

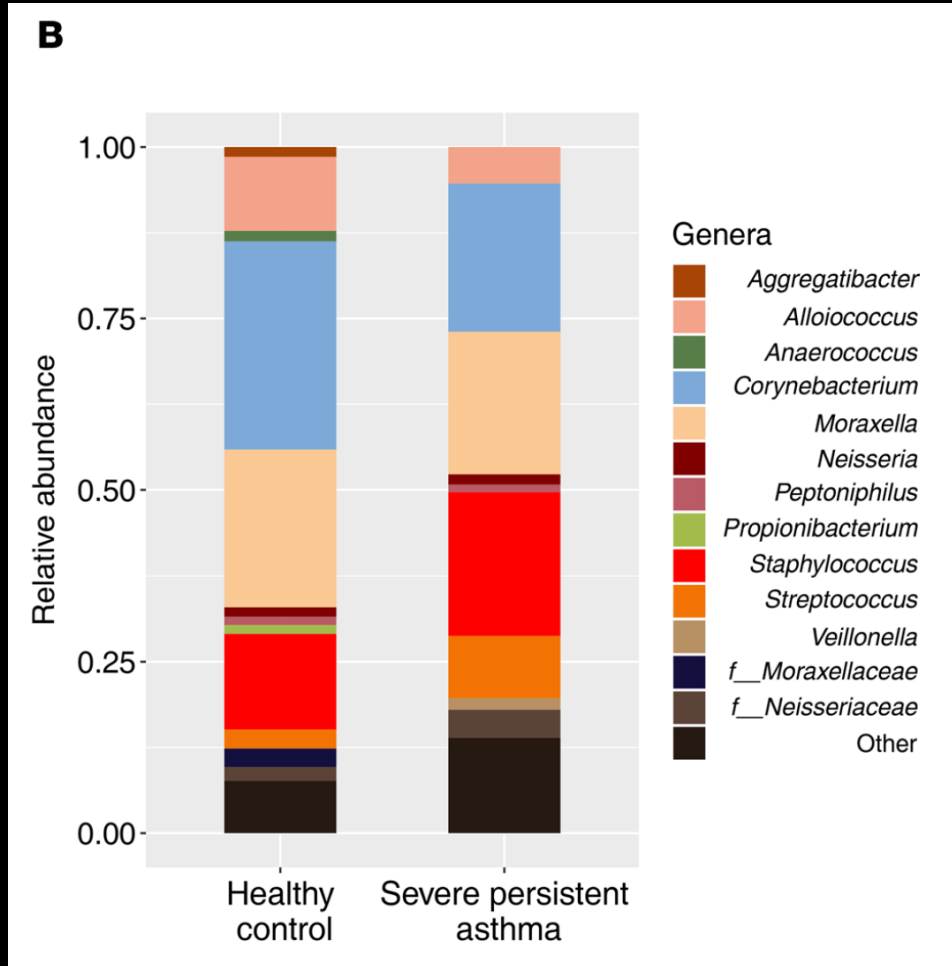
- Nasal transcriptomics can provide an accessible window into asthma pathobiology.
- Nasal gene expression signatures for severe persistent asthma and mild/moderate persistent asthma have been found.
- Master regulator genes predicted to causally regulate ciliary function and inflammatory response in asthma have been identified.



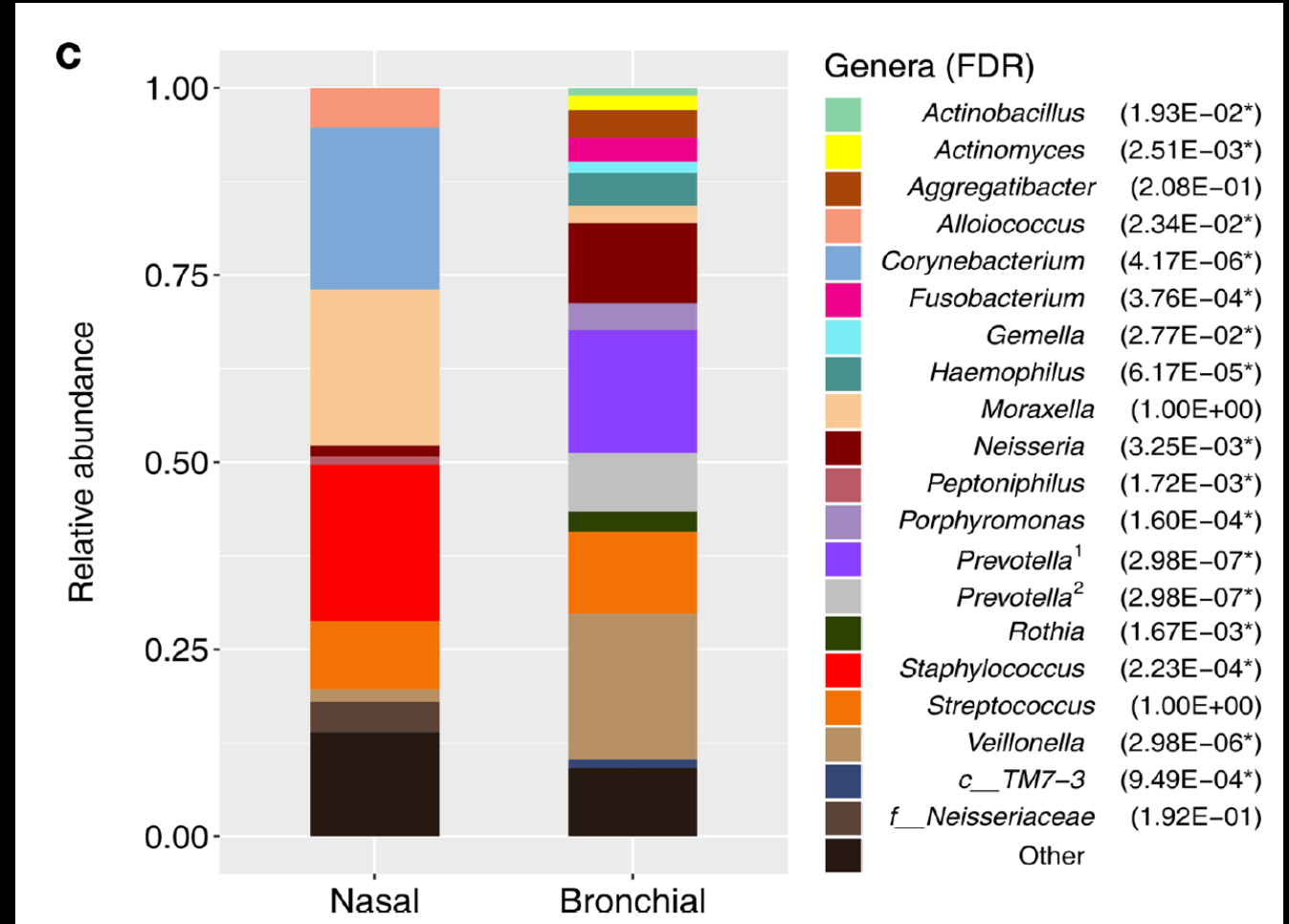
Nasal versus bronchial microbiome in children with severe persistent asthma

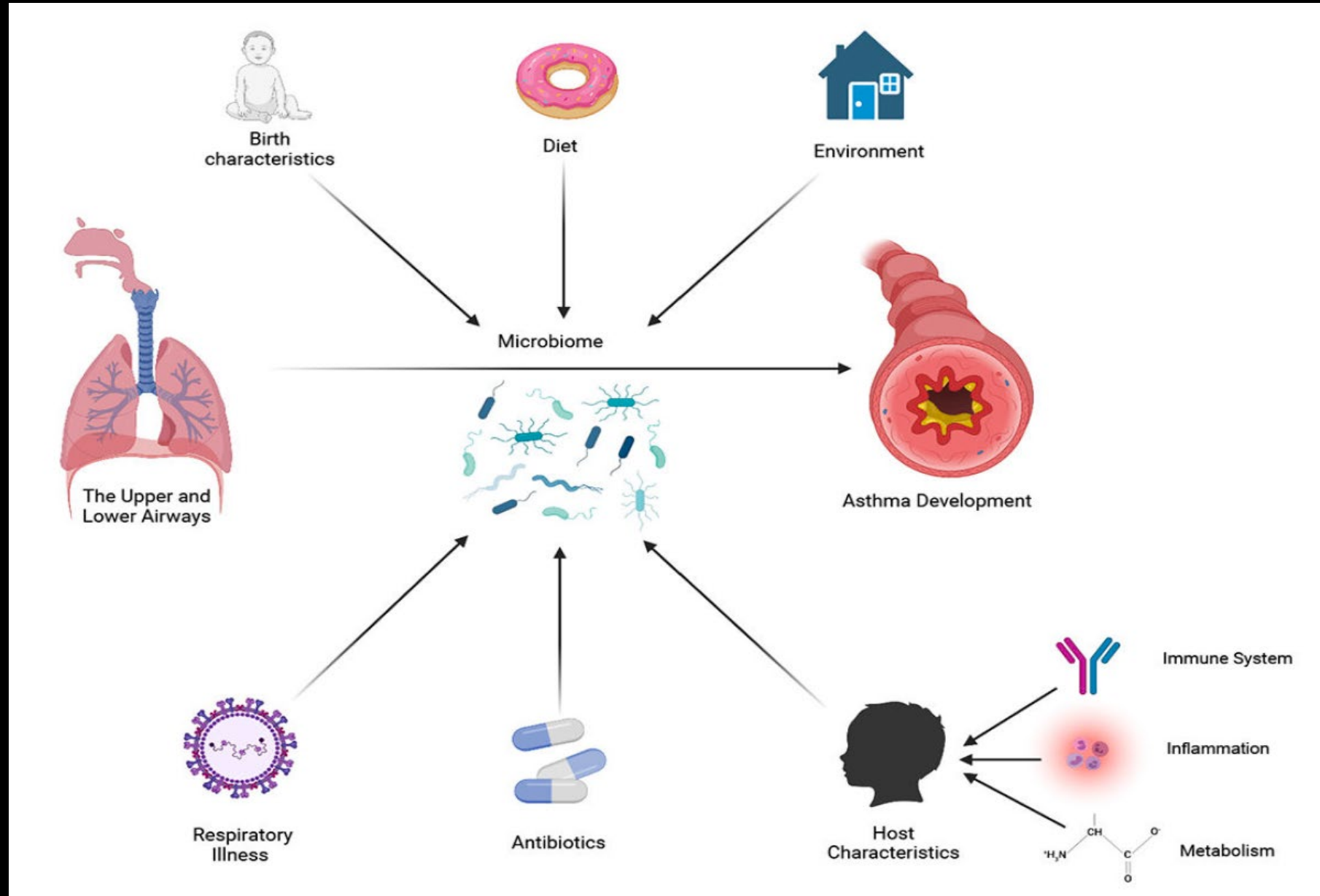


Microbial composition of healthy children versus children with severe persistent asthma.



Nasal versus bronchial microbiome in children with severe persistent asthma





Gemelli monocoriali

Identici in tutto
Stessa classe,
stesso sport,
stessa alimentazione

Assenzio

Parietaria



Infancy
.....
↓



Upper Airway Microbiota

- Decreased diversity
- Altered relative abundance of *Streptococcus* and *Veillonella*

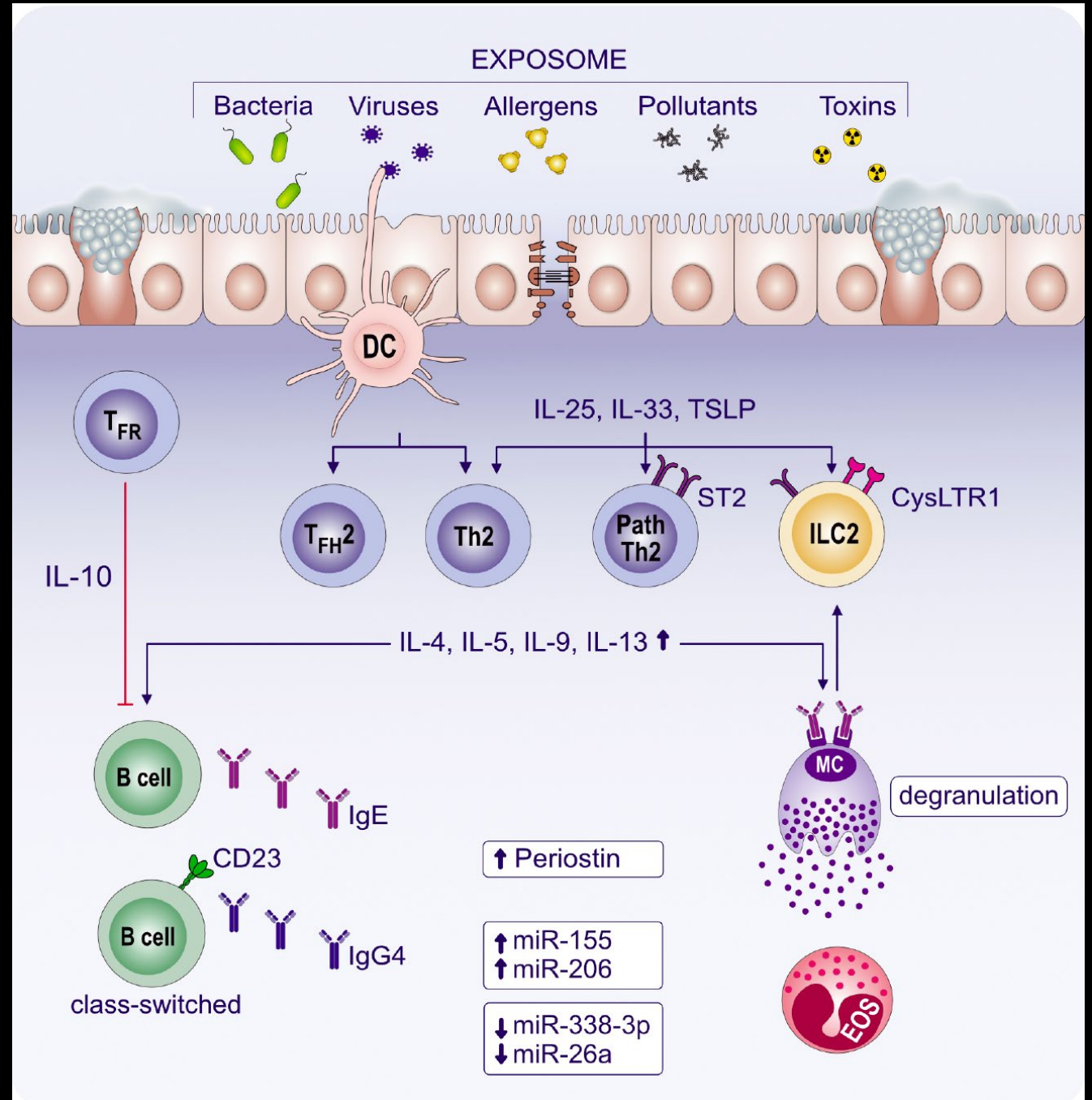
Epigenetic Patterning in Airway Cells

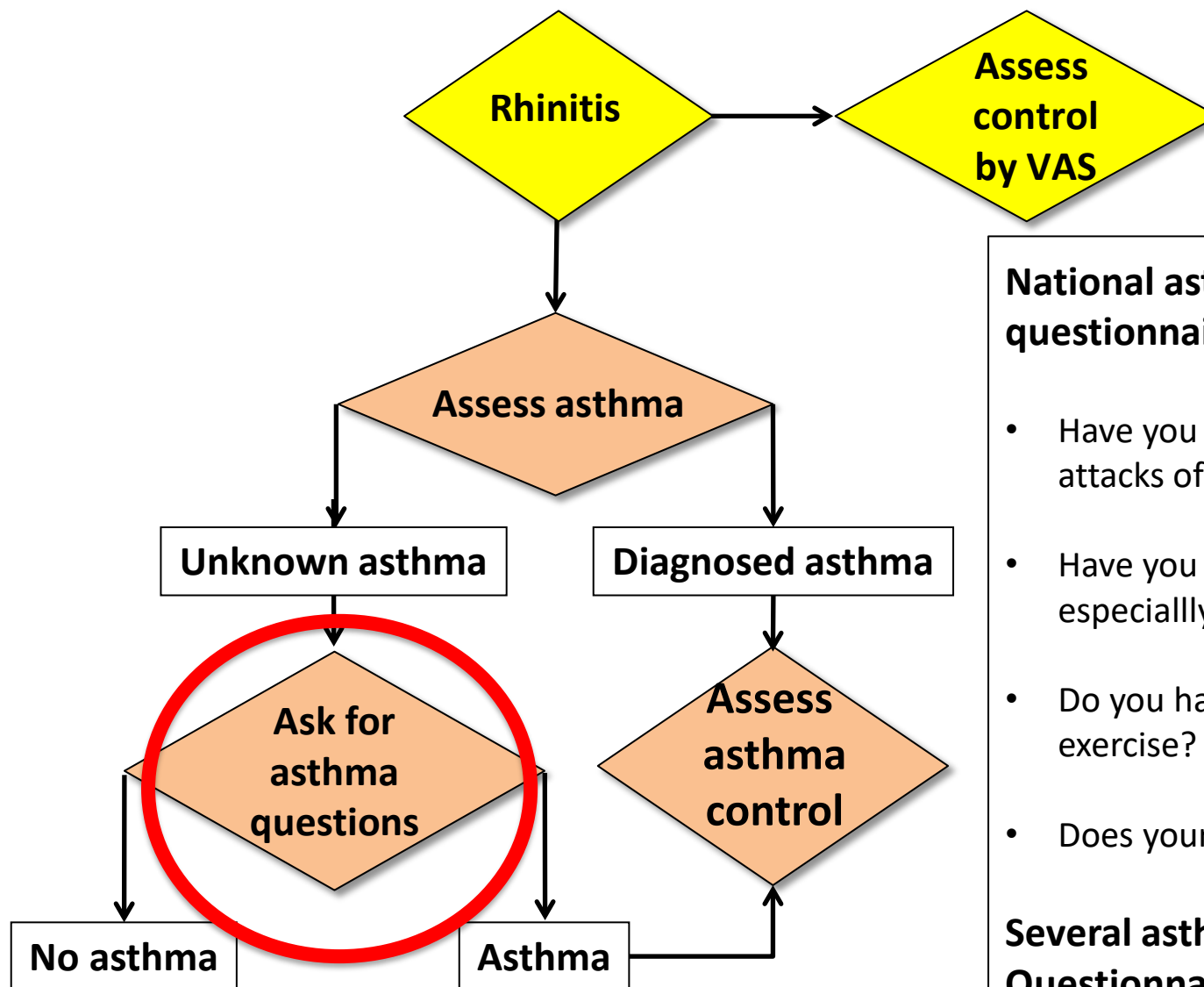
- DNA methylation patterning
- Correlated genes implicated in pathways of lysosome and bacterial invasion of epithelial cells
- Promoting allergic disease in childhood

Early Childhood



Allergic Rhinitis

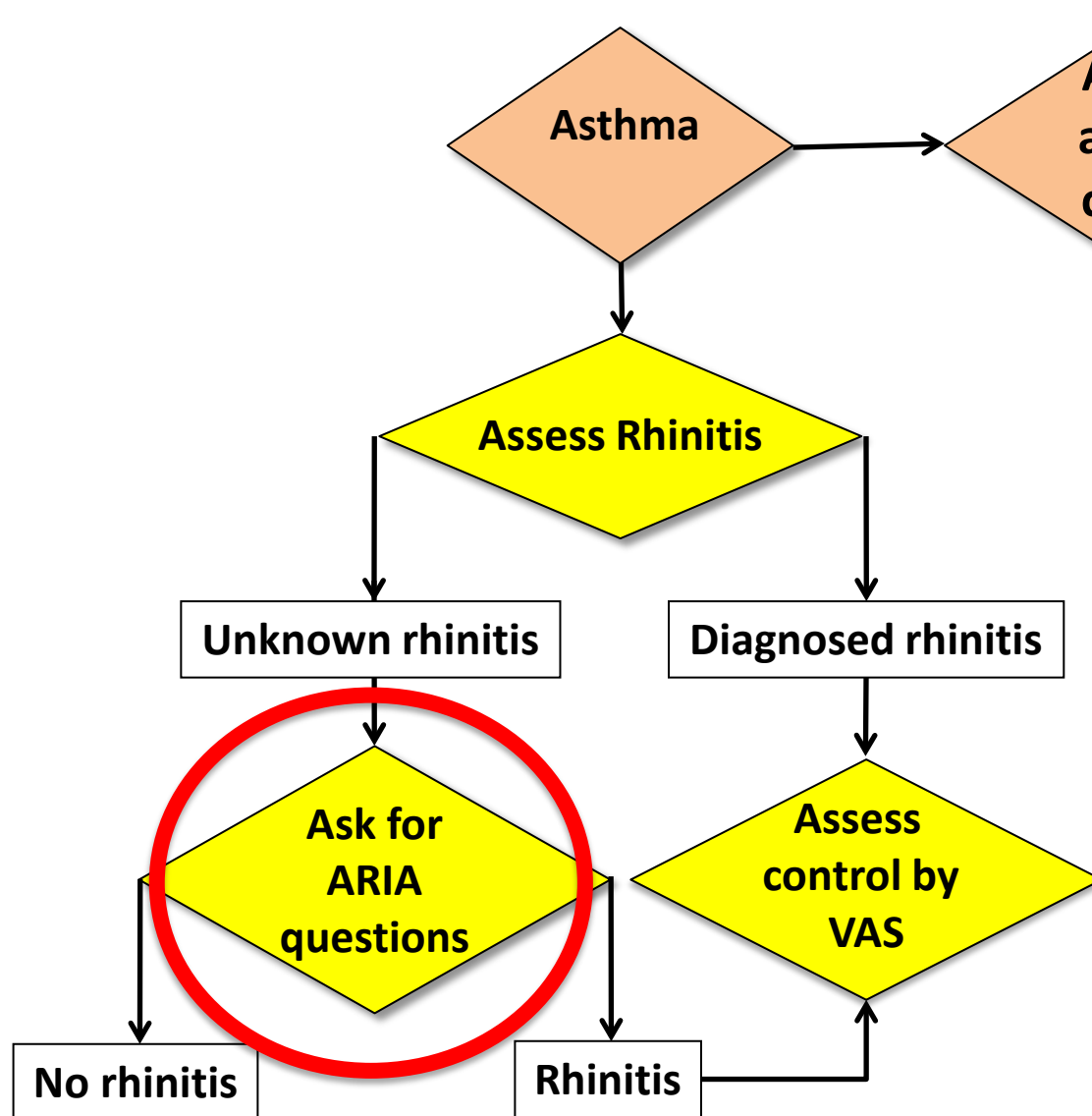




National asthma campaign (NAC) questionnaire

- Have you had an attack or recurrent attacks of wheezing?
- Have you have a troublesome cough especially at night?
- Do you have cough or wheeze after exercise?
- Does your chest feel tight?

Several asthma control Questionnaires are available



ARIA questionnaire

Symptoms suggestive of allergic rhinitis
One or more of the following symptoms

For >1 hr on most days

- Watery rhinorrhea
- Nasal obstruction
- Nasal pruritus
- Conjunctivitis

Symptoms which are not usually associated
With allergic rhinitis

- unilateral symptoms
- mucopurulent rhinorrhea
- post nasal drip
- pain
- recurrent epistaxis
- anosmia

Grazie per la pazienza e l'attenzione

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