



# Antibody Deficiency: What Does It Mean?

September 15, 2022





# DISCLAIMER

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*Immune Deficiency Foundation (IDF) education events offer a wide array of educational presentations, including presentations developed by healthcare and life management professionals invited to serve as presenters. The views and opinions expressed by guest speakers do not necessarily reflect the views and opinions of IDF.*

*The information presented during this event is not medical advice, nor is it intended to be a substitute for medical advice, diagnosis or treatment. Always seek the advice of a physician or other qualified health provider with questions concerning a medical condition. Never disregard professional medical advice, or delay seeking it based on information presented during the event.*





## MISSION

Improving the diagnosis, treatment, and quality of life of people affected by primary immunodeficiency through fostering a community empowered by advocacy, education, and research.



# VISION

IDF seeks to ensure that everyone in the U.S. affected by PI has a fully informed understanding of

1. the PI diagnosis that affects them,
2. all available treatment options,
3. the expected standard of care,
4. all their opportunities for connection and support within the PI community.



Questions?



<https://community.primaryimmune.org/s/newask>

800-296-4433

# Get Connected Groups

<https://primaryimmune.org/support-services>

Virtual groups exclusively for individuals & families living with PI





# IDF Forums

*Coming soon to your home!*

- *September 20: Young Adult Hangout: Ages 18-25*
- *September 28: Lunch & Learn: Hemophagocytic Lymphohistiocytosis (HLH)*
- *October 20: Paying for Immunoglobulin (Ig) Replacement Therapy*



# IDF Education Meetings



October 22

Minneapolis (Bloomington), MN

December 3

Baltimore (Hanover), MD





# PI Conference

PRIMARY IMMUNODEFICIENCY **IN FOCUS**

**iD** Immune  
Deficiency  
Foundation

OCTOBER 6-8, 2022



# THANK YOU TO OUR SPONSORS

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**GRIFOLS**

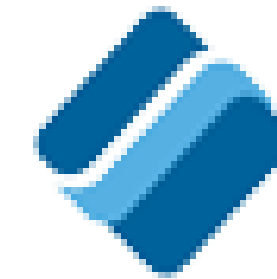


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IDF Forum- Sept 15, 2022



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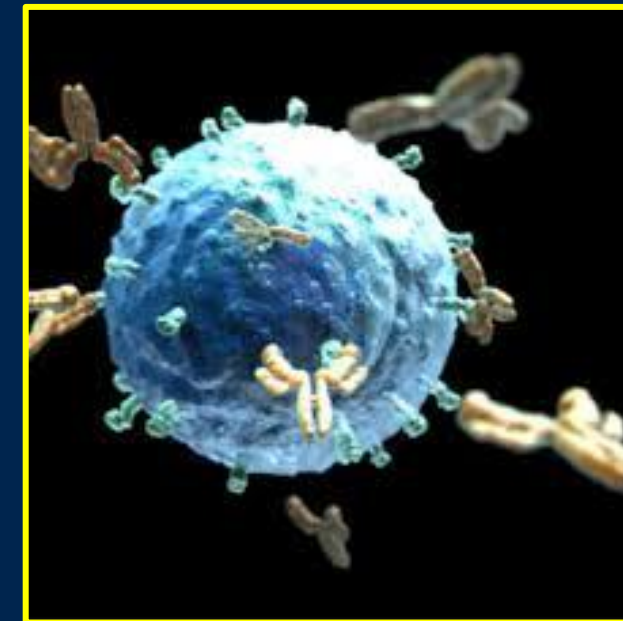
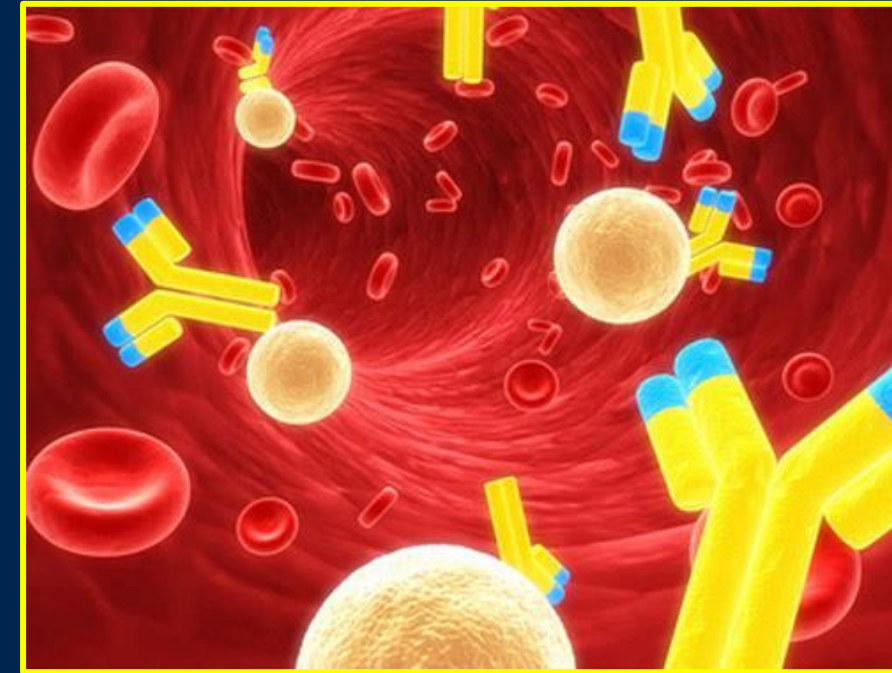
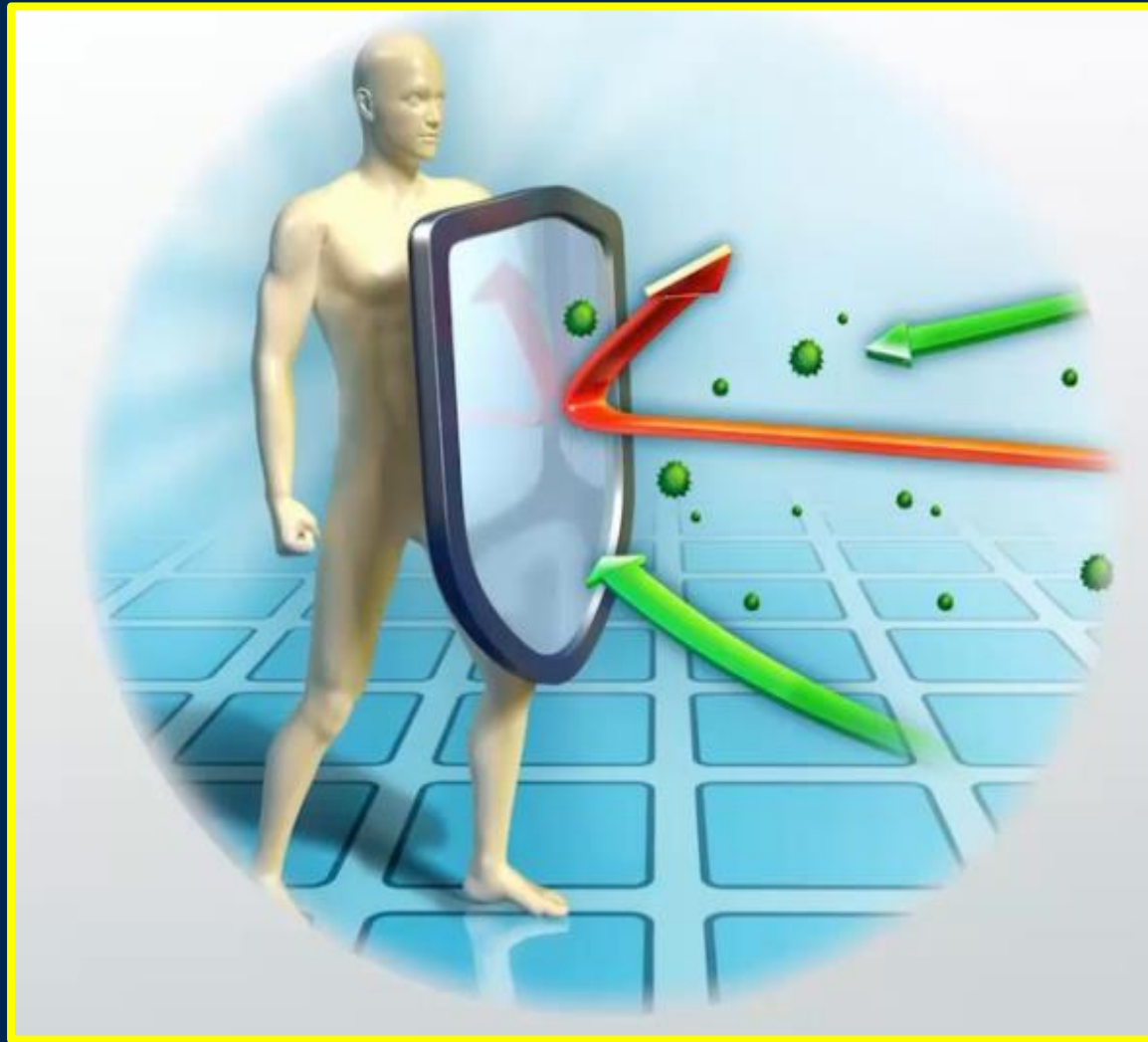
# Antibody Deficiency...what does it mean?

Javier Chinen, MD, PhD  
Professor

Immunology, Allergy and Retrovirology  
Baylor College of Medicine  
Texas Children's Hospital

# Antibody Deficiency:

- Antibodies are part of the Immune System

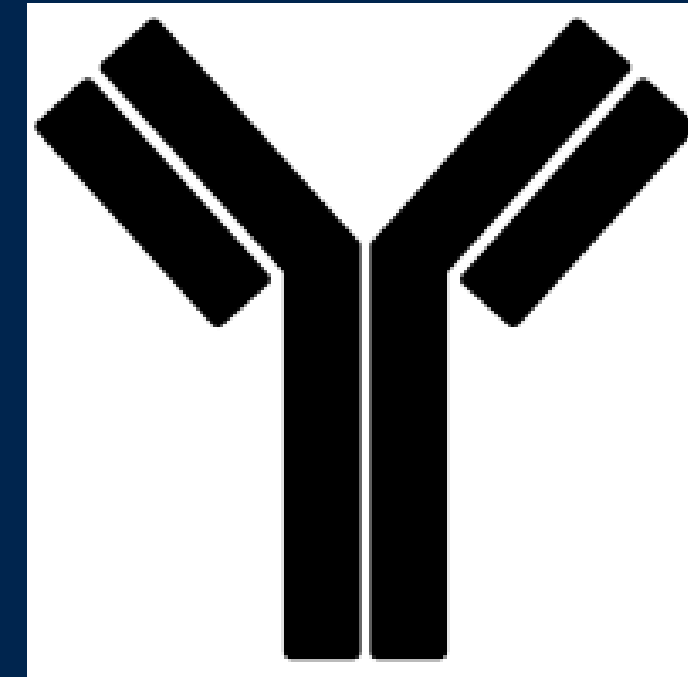




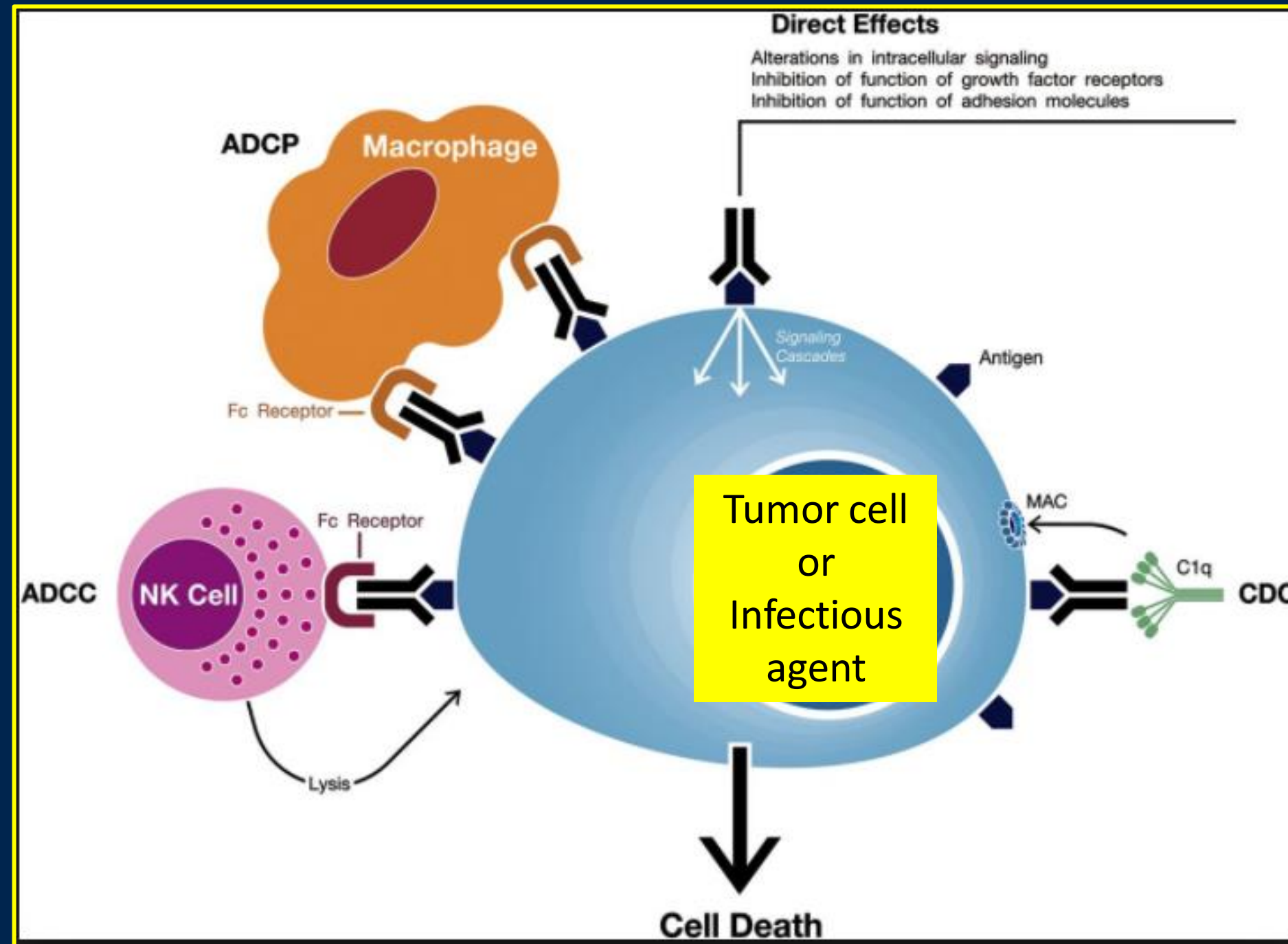
# Antibody Deficiency:

Five kinds/classes of antibodies:

- IgG – Most Significant for Defenses
- IgA – Important in mucosas (respiratory, digestive, genital)
- IgM – First responders
- IgE – Allergies and Parasites (worms)
- IgD – accessory
  
- There are 4 IgG subclasses



# Antibody Deficiency:



Blood 2016 127:681-695

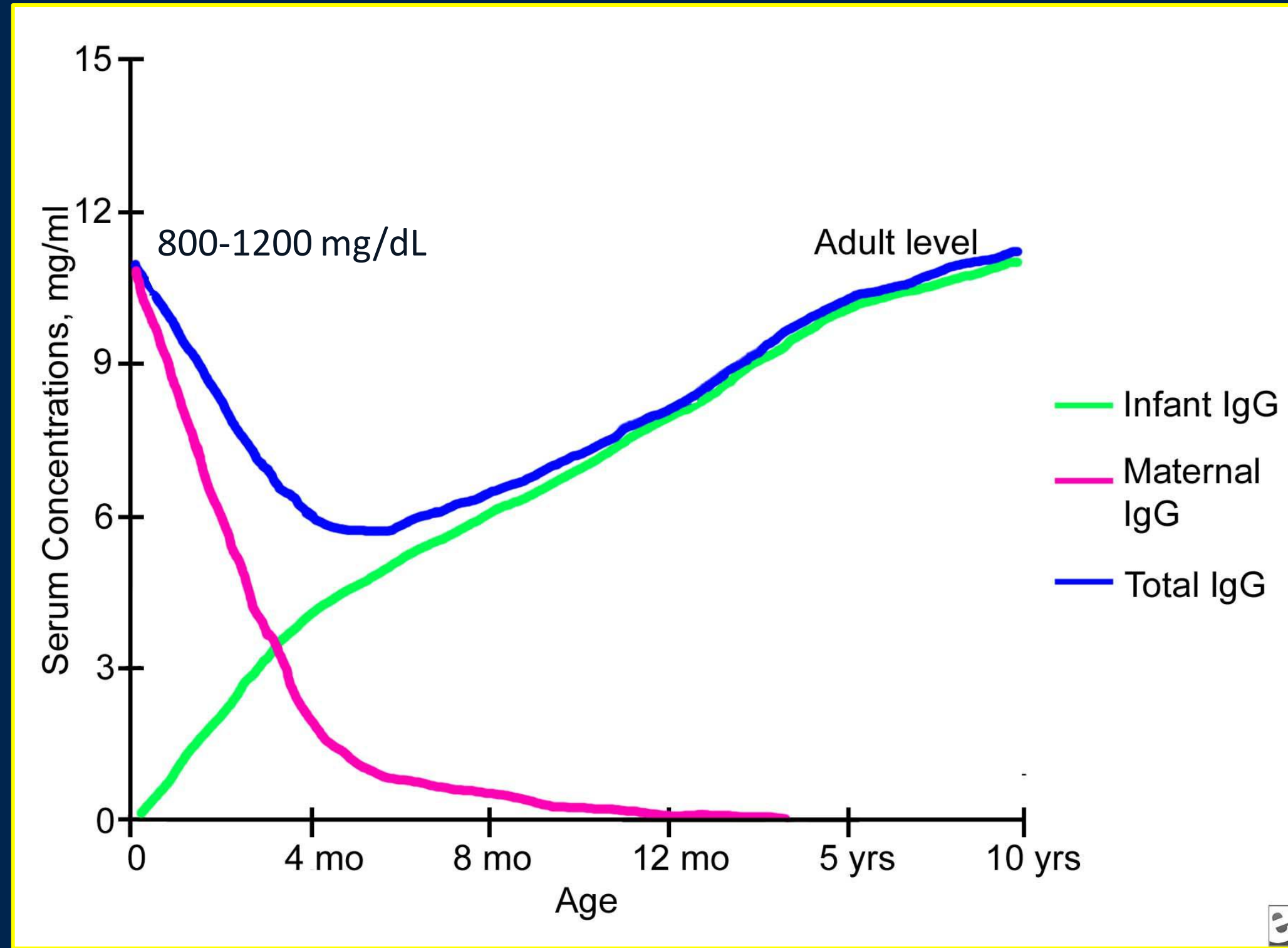


# Antibody Deficiency Means:

Low Antibody Levels  
(Quantity)

And/or

No Antibody Response  
(Quality)



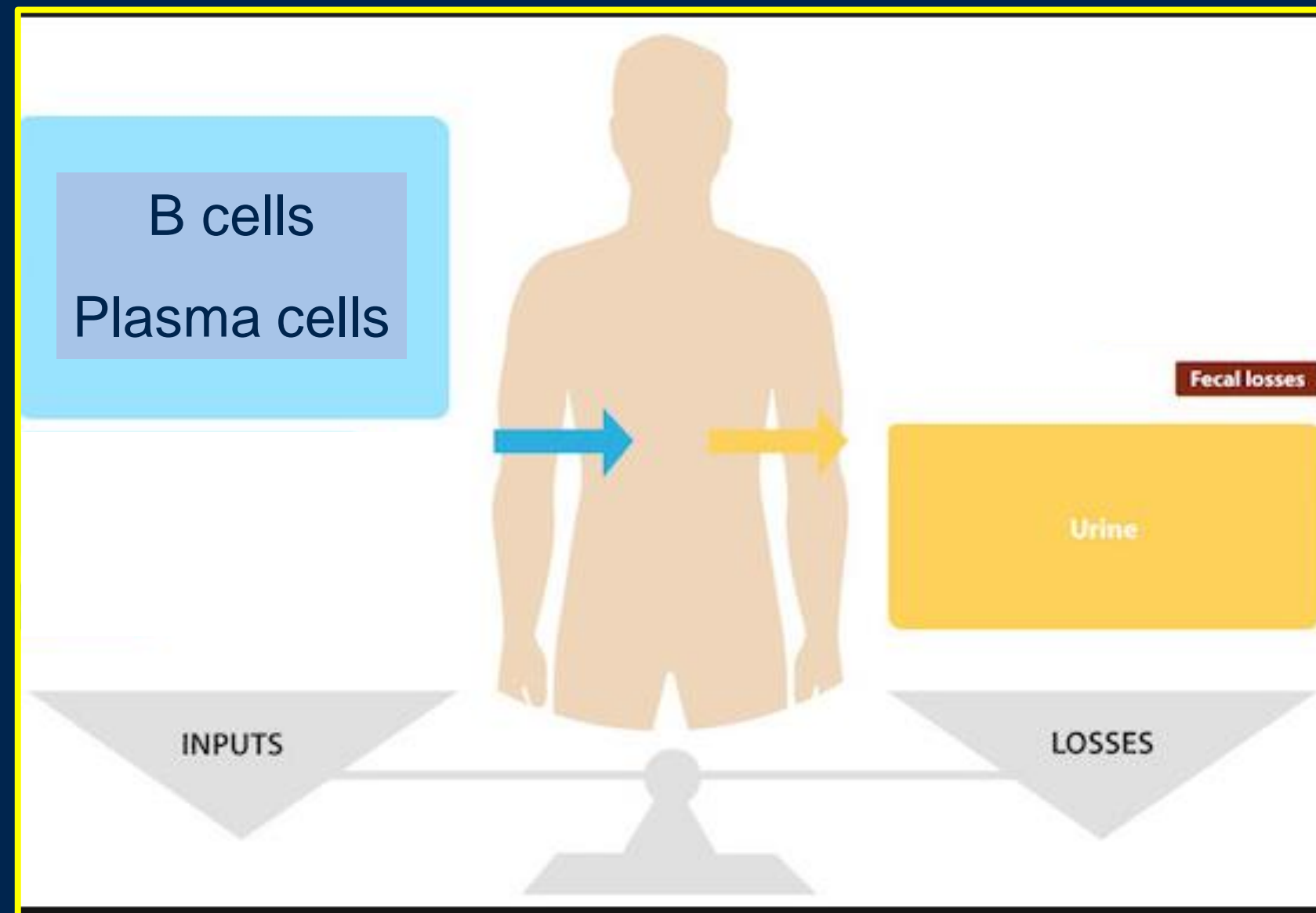
IgG levels



# Antibody Deficiency:

Low Production -

Excessive losses – More common



# Antibody Deficiency:

## Excessive Losses:

- Loose Stools, diarrhea
- Kidney Problems- Proteinuria
- Other
  
- Mild decrease of Antibody levels
- Transient with disease activity

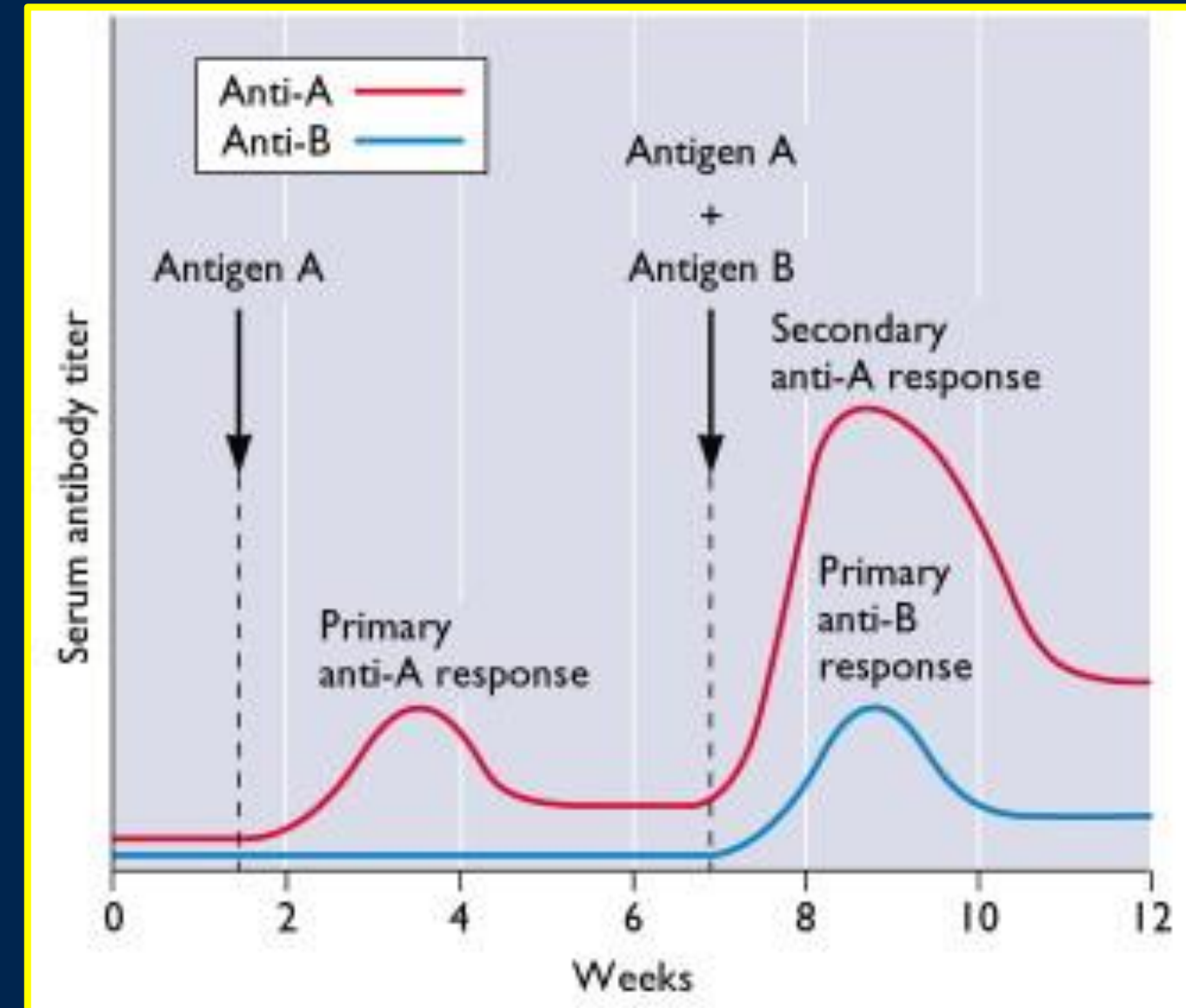


# Antibody deficiency

1 Low antibody levels

2. Normal levels,.... however

no response to infections

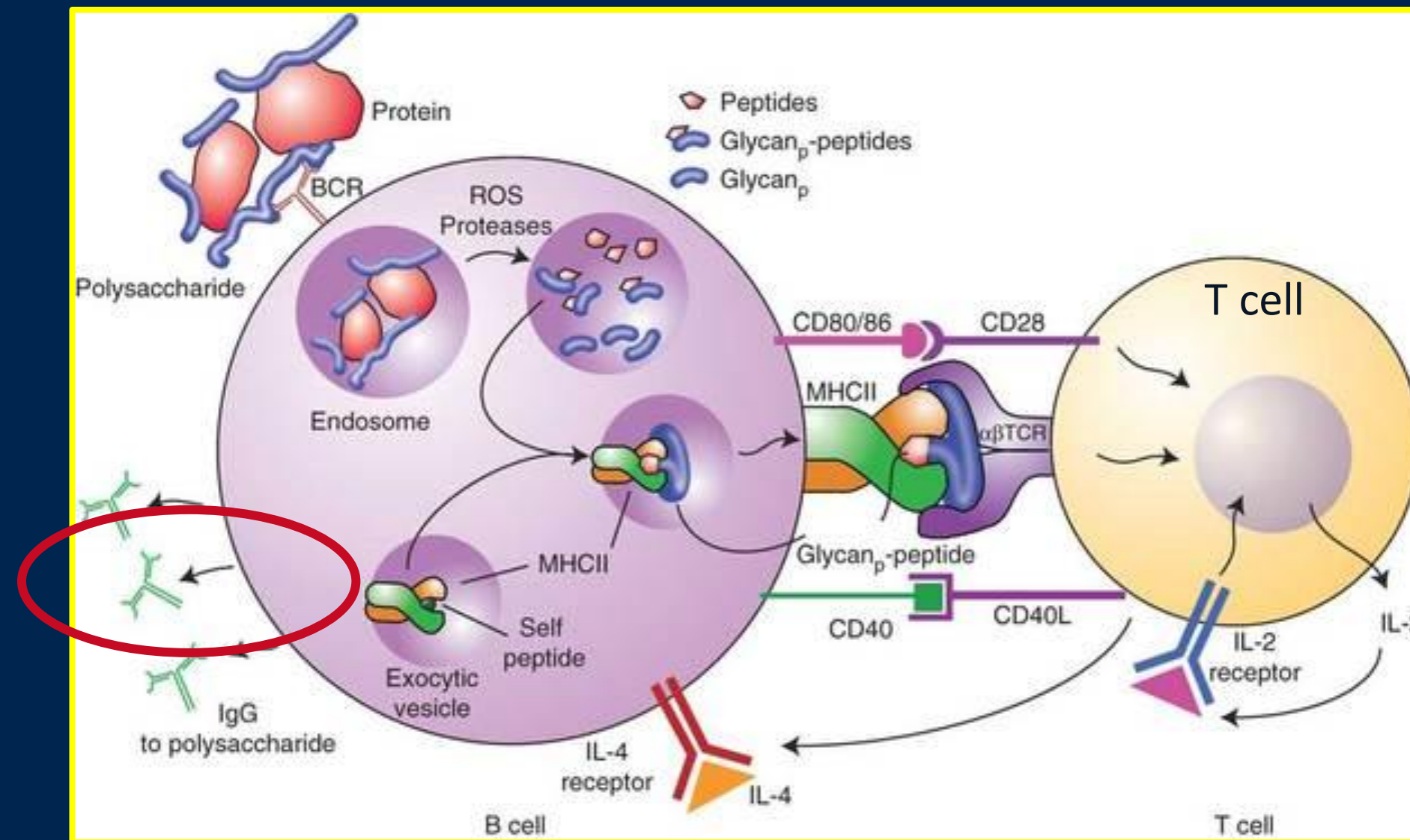


Immunobiology, Janeway

# Antibody deficiency

Why there might not be a good response?

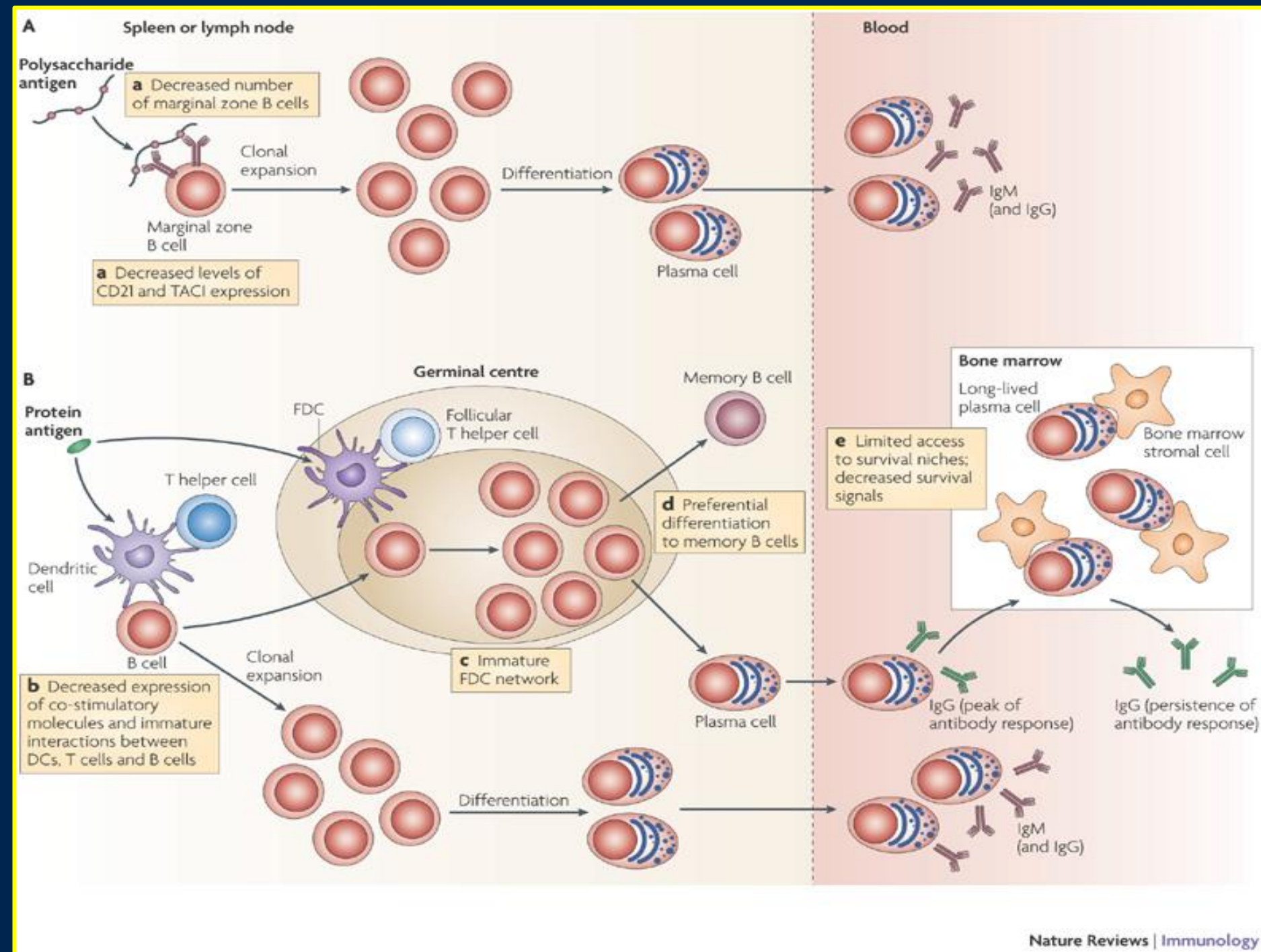
- Many steps to produce a response





# Antibody deficiency

- Many steps to produce a response



Nature Reviews | Immunology

Nature Reviews Immunology 9, 185-194 (March 2009)

Antibody Deficiency Means:

Low Antibody Levels

And/or

No Antibody Response

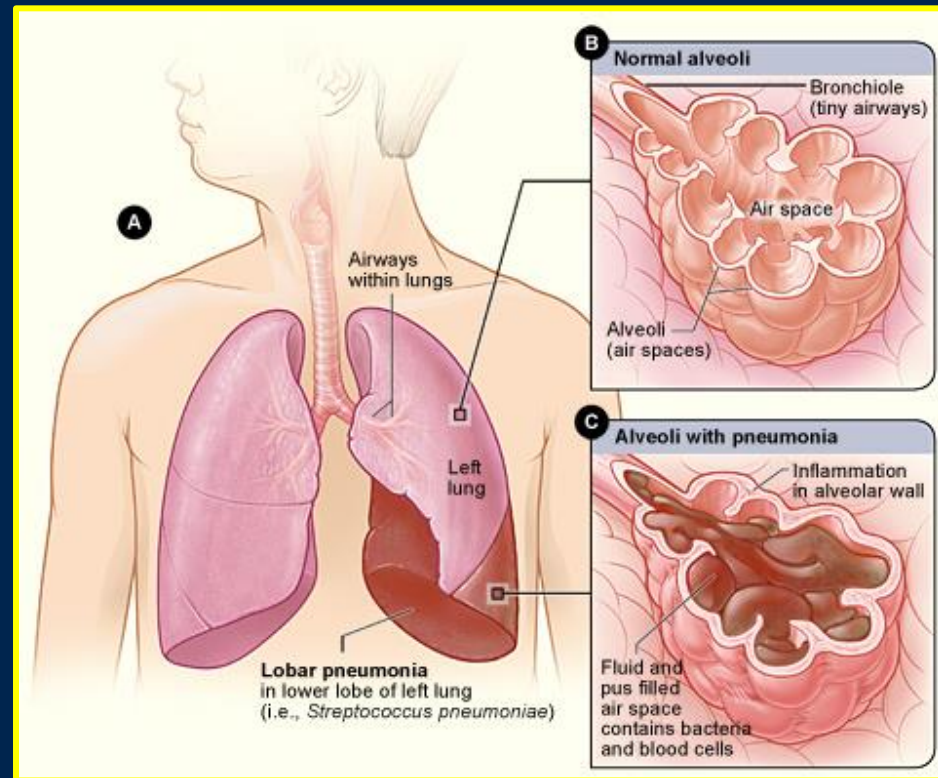


## Antibody Deficiency Means:

- Higher **frequency** of infections than expected
- More **severe** infections than normal
- **Prolonged** time to recovery
- Other immune problems- **inflammation**

# Antibody deficiency

## - Common infections



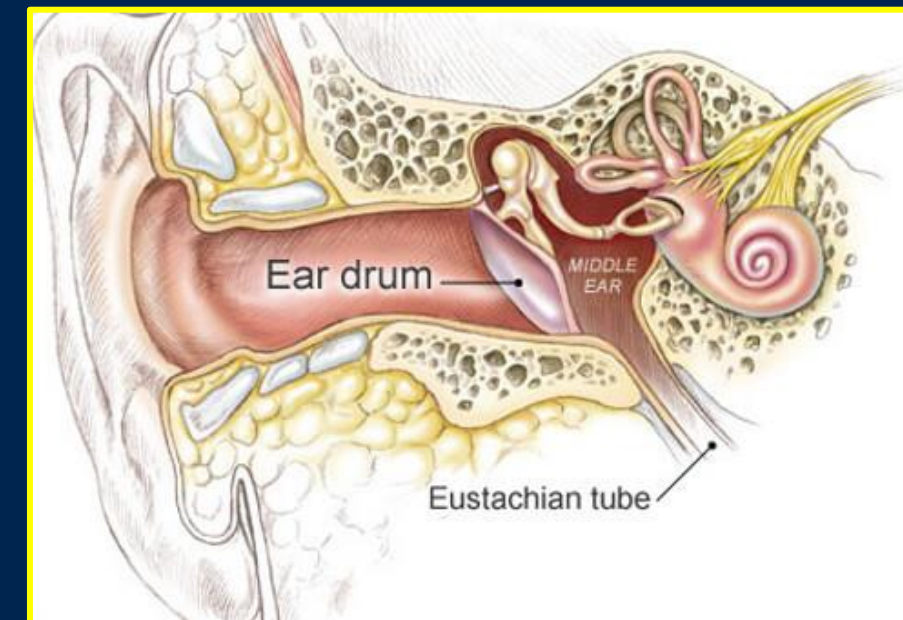
pneumonia



sinusitis



diarrhea



Ear infection

Images from NHLBI, MedicineNet



# Antibody Deficiencies:

## - Primary or congenital

Common Variable Immunodeficiency (CVID)

Transient Hypogammaglobulinemia of Infancy (THI)

X-linked agammaglobulinemia

Selective IgA deficiency

Selective IgG2 deficiency

*T cell immunodeficiencies*

## - **SECONDARY CAUSES**

# Antibody Deficiency

## MANAGEMENT

1. Prevent Infections
2. IgG replacement
3. Be aware of non-infectious complications



# Antibody Deficiency

## MANAGEMENT

### 1. Prevent Infections- reduce risk



Hand washing

Avoid crowds

Boiled/bottled water

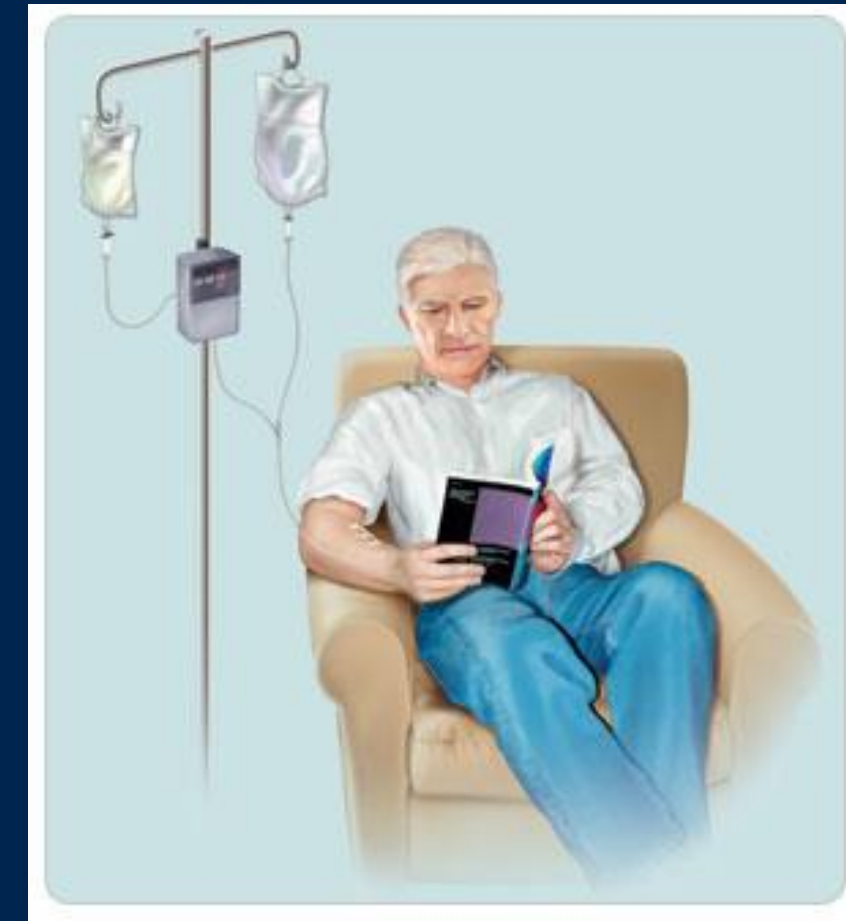
# Antibody Deficiency

## MANAGEMENT

1. Prevent Infections
2. **IgG replacement**



subcutaneous



intravenous



# Antibody Deficiency

## MANAGEMENT

1. Prevent Infections
2. IgG replacement

### 3. Be aware of non-infectious complications

Keep in touch with the  
clinical immunologist!

CHRONIC LUNG DISEASE

GRANULOMAS

INFLAMMATORY DISORDERS- JOINT PAIN

AUTOIMMUNE CYTOPENIA- ANEMIA

## Antibody deficiency means:

- Low IgG levels or sub optimal antibody responses
- An increase in number or severity of infections
- Need of measures to reduce risk of infections
- Long life expectancy with IgG supplementation

# THANK YOU!

**Javier Chinen, MD, PhD**

Baylor College of Medicine

Texas Children's Hospital – The Woodlands







From all of us at IDF

Thank You!

- Abe
- Frances
- CHRIS
- Lorraine
- Jarey
- ANGELA
- Katherine
- Rachel
- Lynn
- Makenna
- Clayth
- Chuck
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- Karen
- Zach
- Emma
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- Alissa
- Jennifer
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- Maura
- Kim
- Jamie

You make the IDF community stronger

