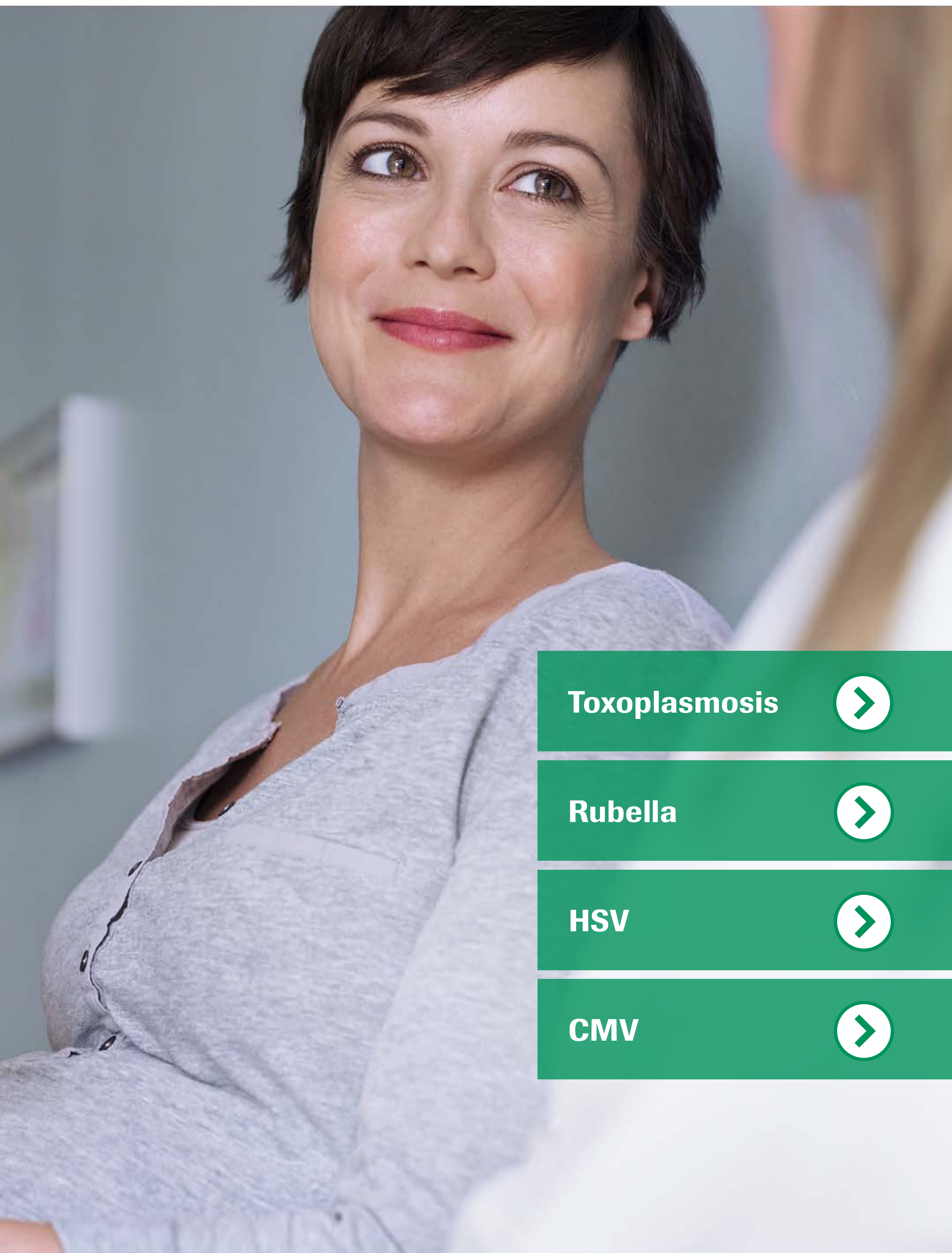






# Elecsys<sup>®</sup> TORCH panel

*Reliable screening for early diagnosis*



- [Toxoplasmosis](#) 
- [Rubella](#) 
- [HSV](#) 
- [CMV](#) 

# Toxoplasmosis

*The safe and sure approach  
to Toxo screening*

- Ultrasensitive Toxo IgM optimized to detect all potential acute infections
- Toxo IgG with high sensitivity to past infections
- Toxo IgG avidity to confirm exclusion of an acute infection



**Suggested *Toxoplasma gondii* serologic diagnostic algorithm in immunocompetent individuals**



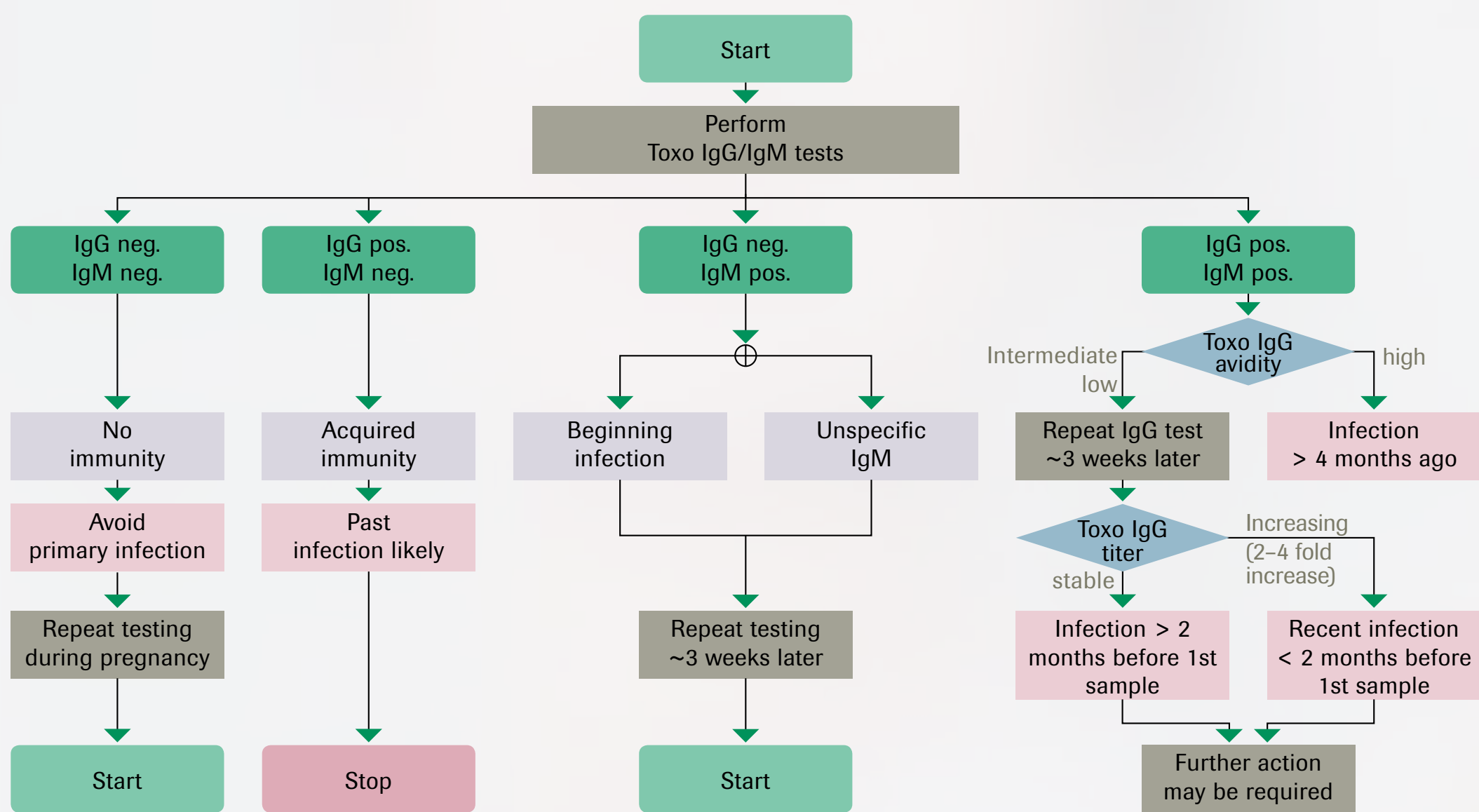
**Pregnancy toxoplasma serology**



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## Suggested *Toxoplasma gondii* serologic diagnostic algorithm in immunocompetent individuals

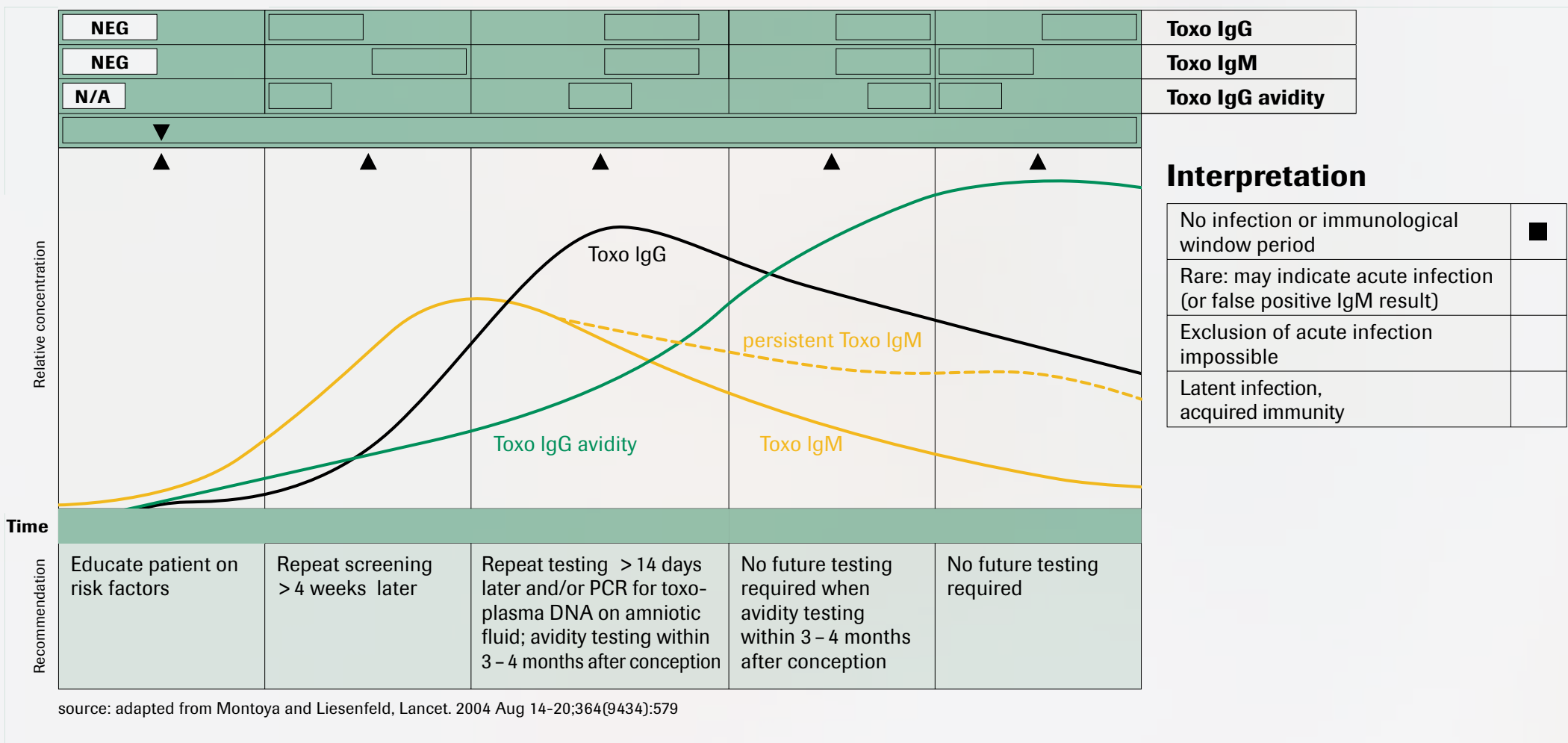


Remington, J.S., McLeod, R., Desmonts, G. (2001). *Toxoplasmosis*, 205-346. in J.S. Remington & J.O. Klein (ed.), *Infectious Diseases of the Fetus and Newborn Infant*, 5th ed., W.B. Saunders, Philadelphia, Pa.

Meek, B., van Gool, T., Gilis, H., Peek, R. (2001). *Dissecting the IgM antibody response during the acute and latent phase of toxoplasmosis*. *Diagn Microbiol Infect Dis* 41: 131-7.

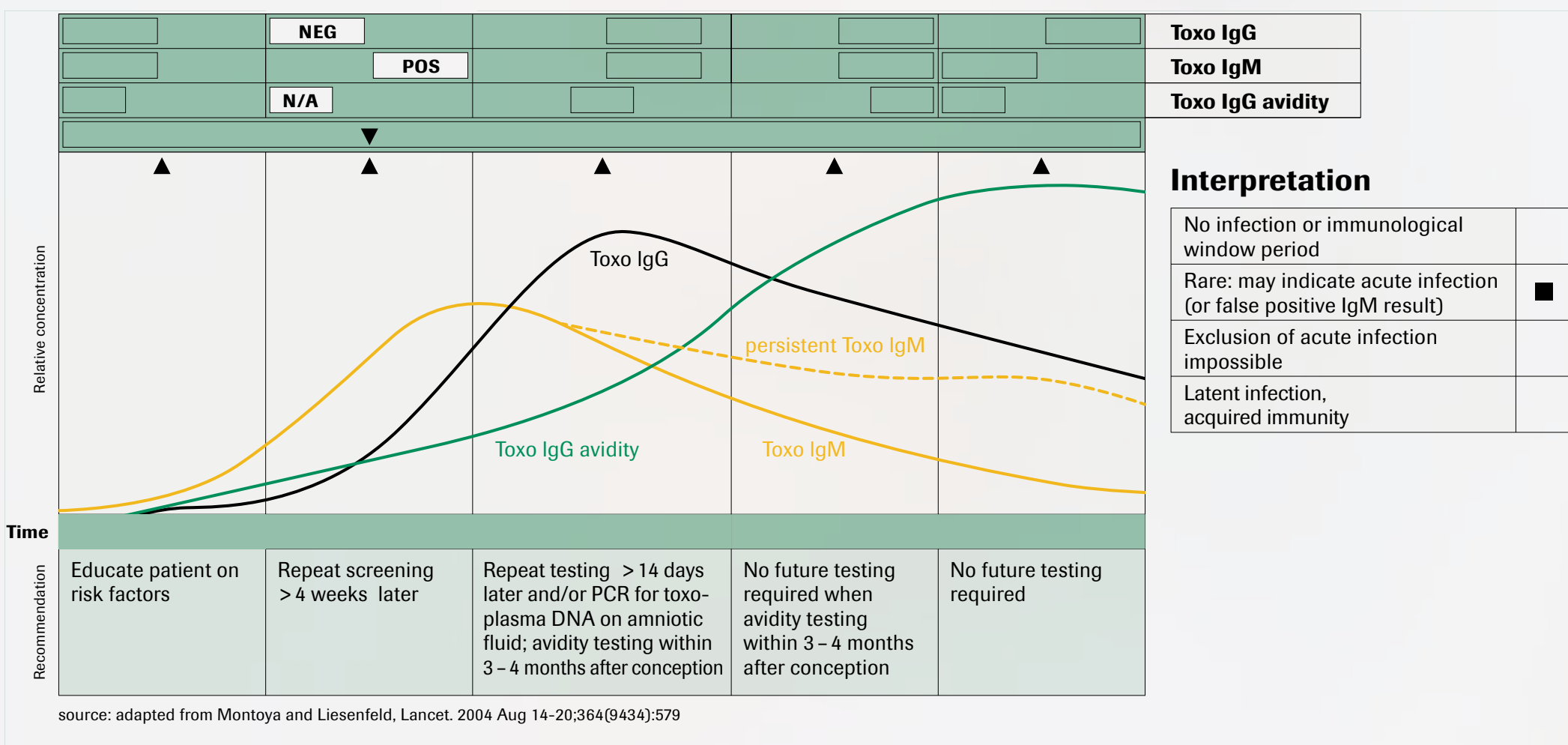


# Pregnancy toxoplasma serology





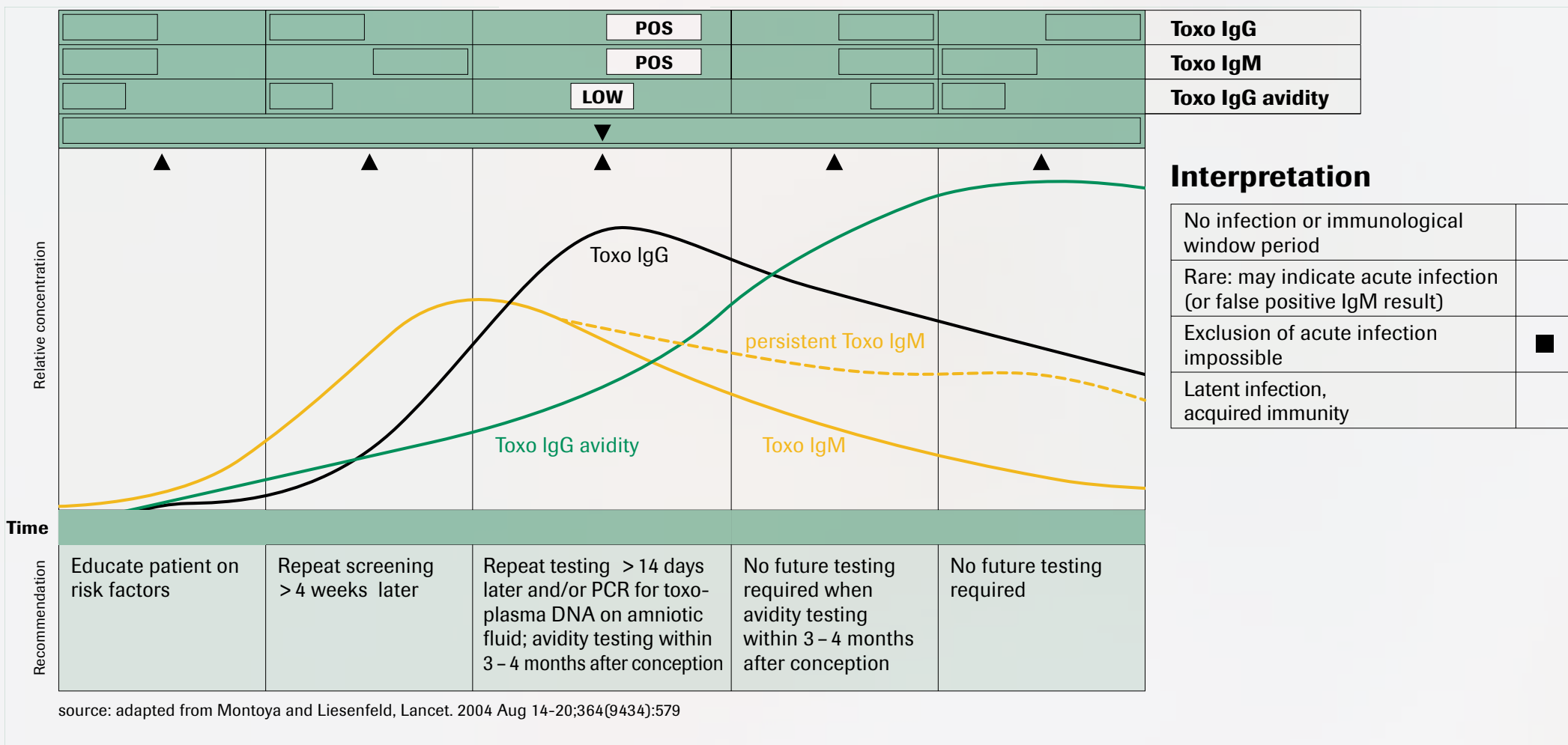
# Pregnancy toxoplasma serology



Result	Interpretation
NEG	No infection or immunological window period
POS	Rare: may indicate acute infection (or false positive IgM result) ■
N/A	Exclusion of acute infection impossible
	Latent infection, acquired immunity

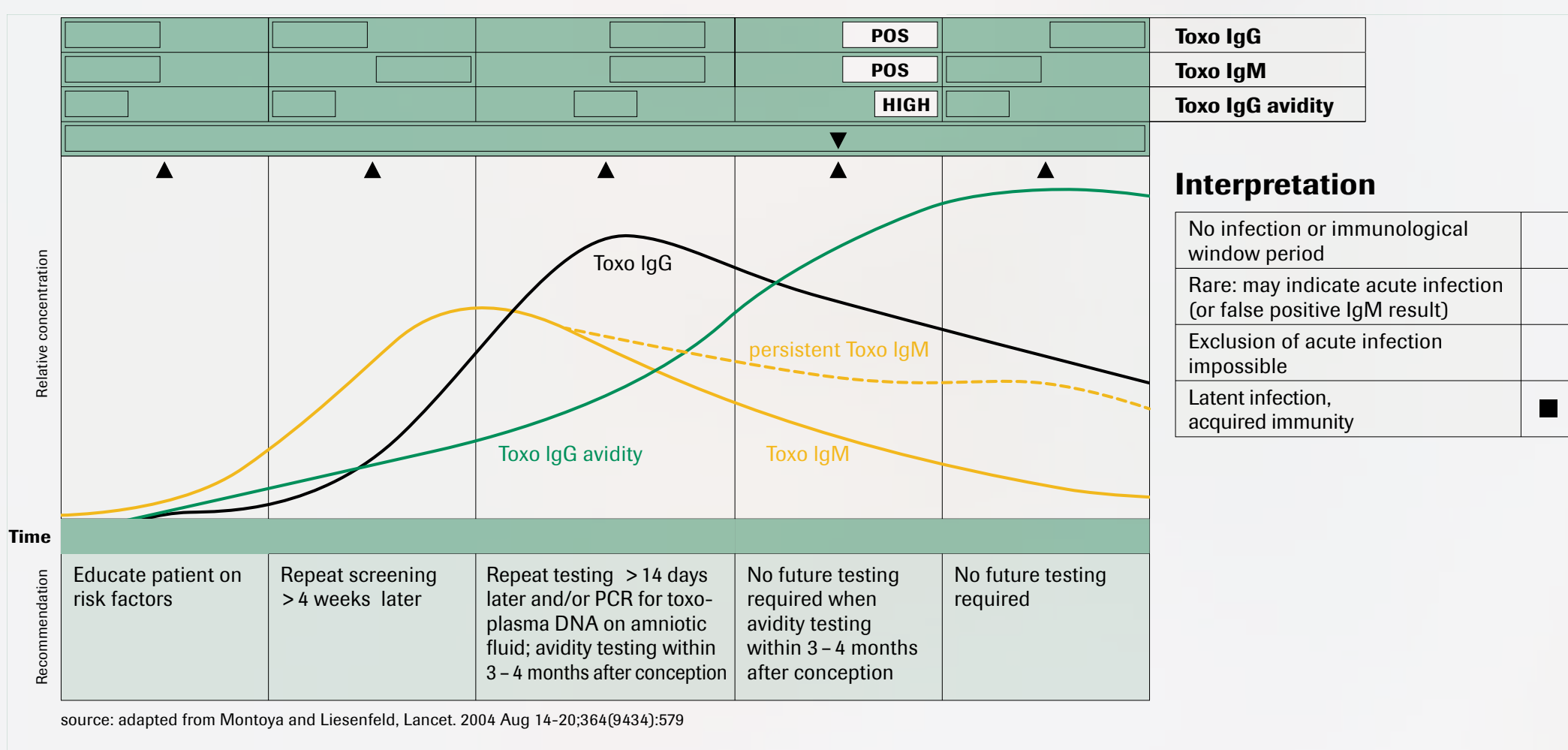


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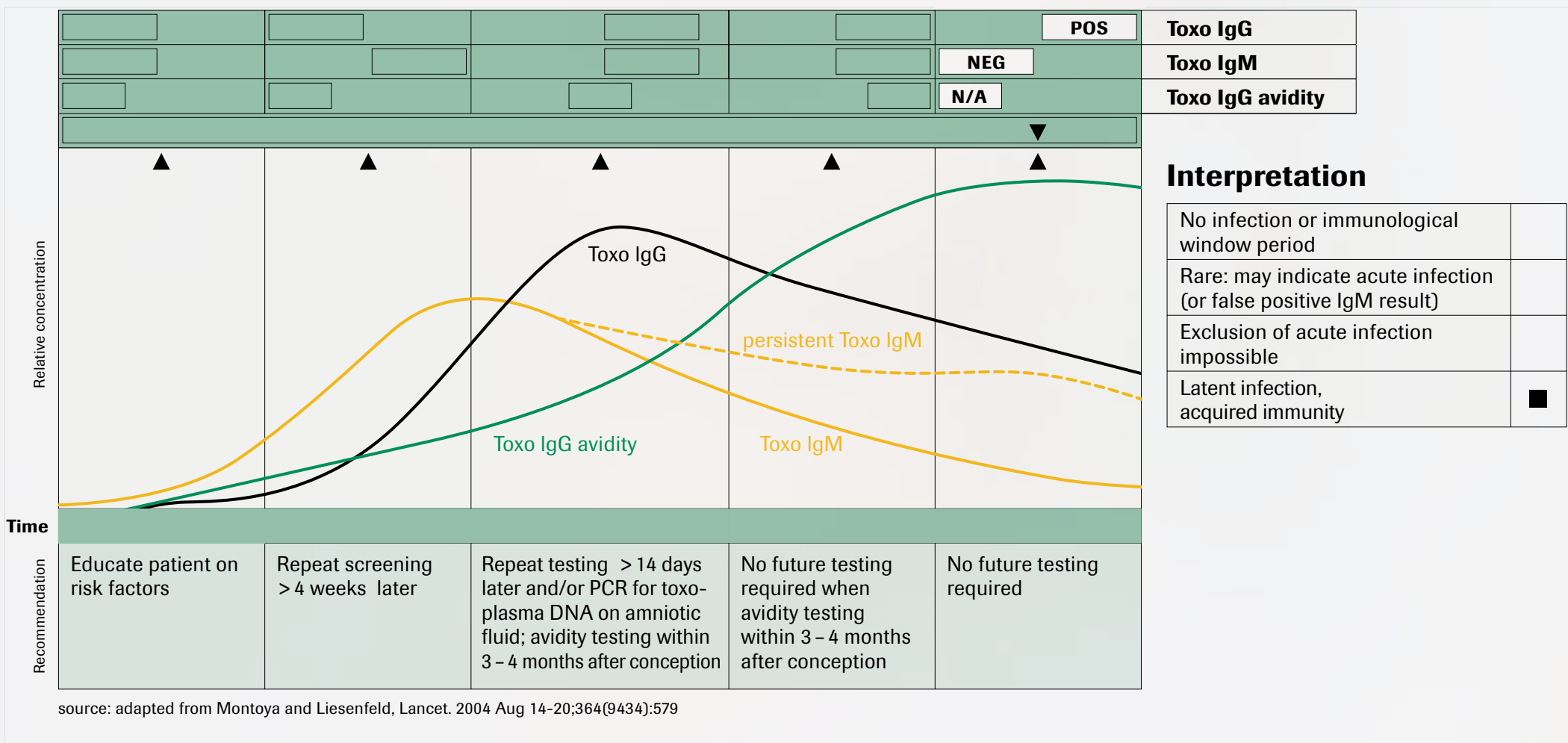


# Pregnancy toxoplasma serology





# Pregnancy toxoplasma serology





# Rubella

*Clear discrimination between acute and past infections*

## Superior sensitivity where it matters most

- IgM very sensitive to early acute infection
- IgM less sensitive to persistent IgM
- IgG test ultra sensitive to remote infections and vaccination



**Diagnosis of rubella infections**



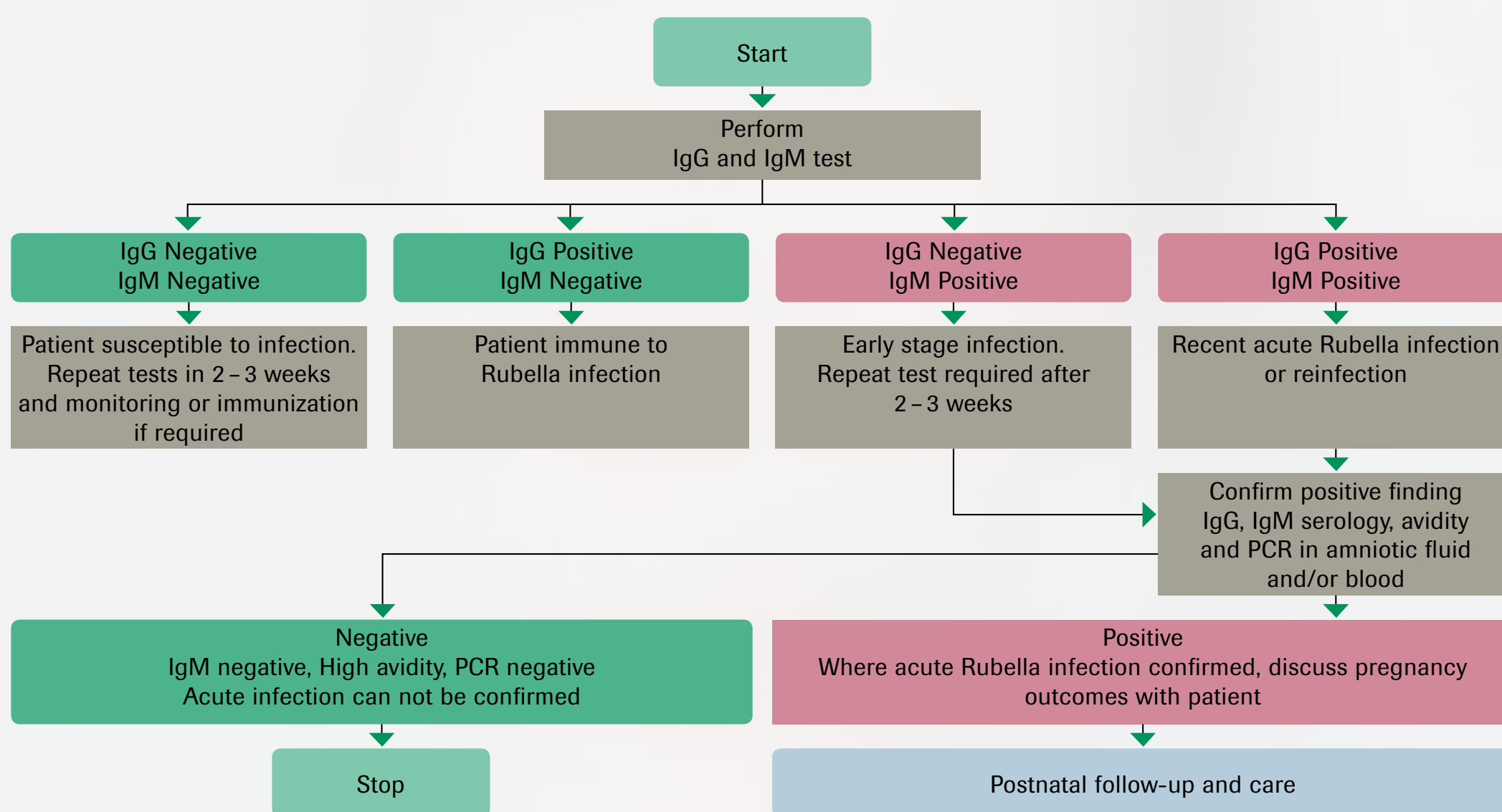
**Pregnancy rubella serology**



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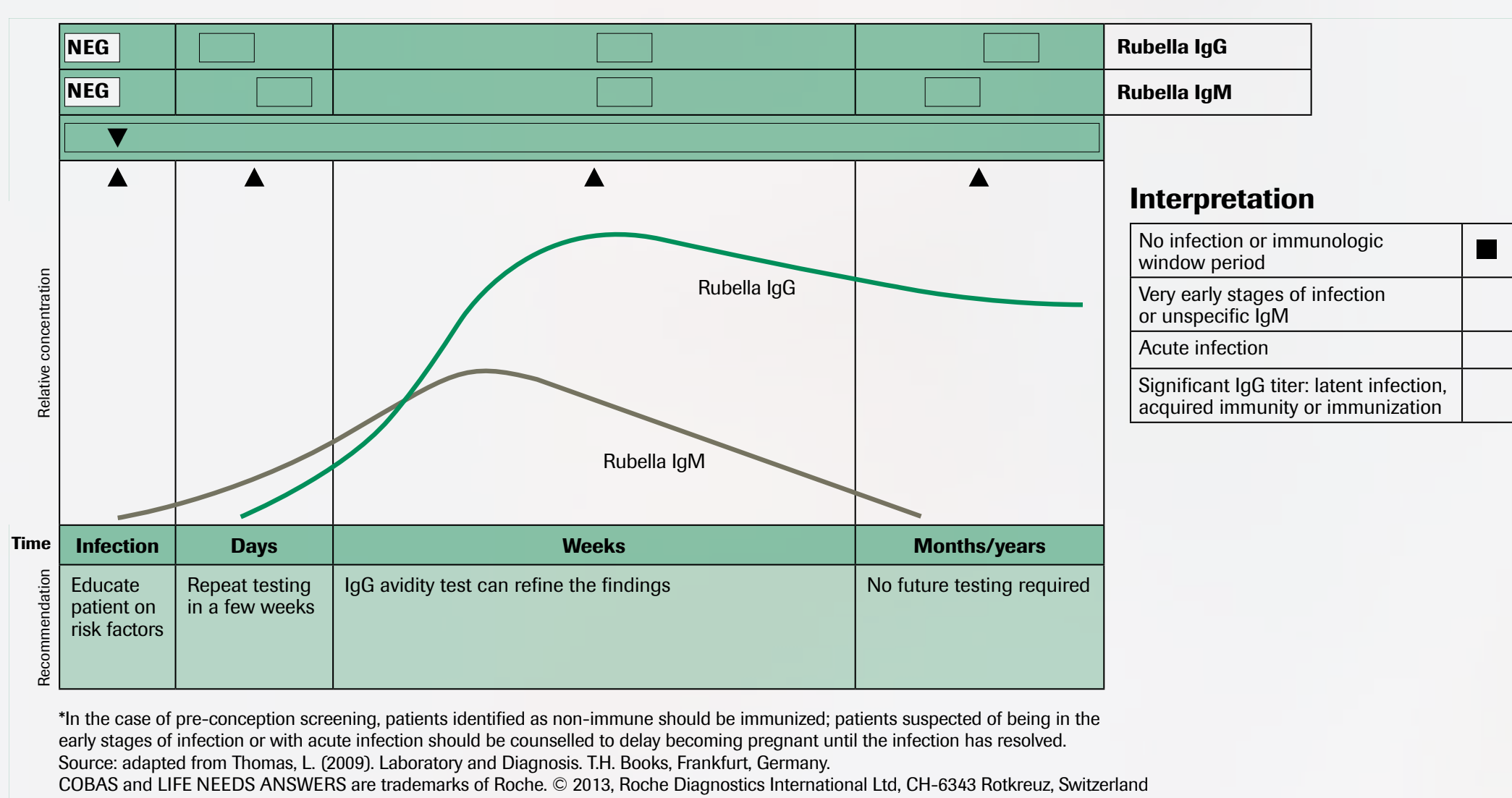
## Diagnosis of rubella infections



Mendelson et al. (2006) *Reprod Toxicol.* 21(4), 350-82. *Manual for the Surveillance of Vaccine-Preventable Diseases*: Available at: [www.cdc.gov/vaccines/pubs/surv-manual/index.html](http://www.cdc.gov/vaccines/pubs/surv-manual/index.html).

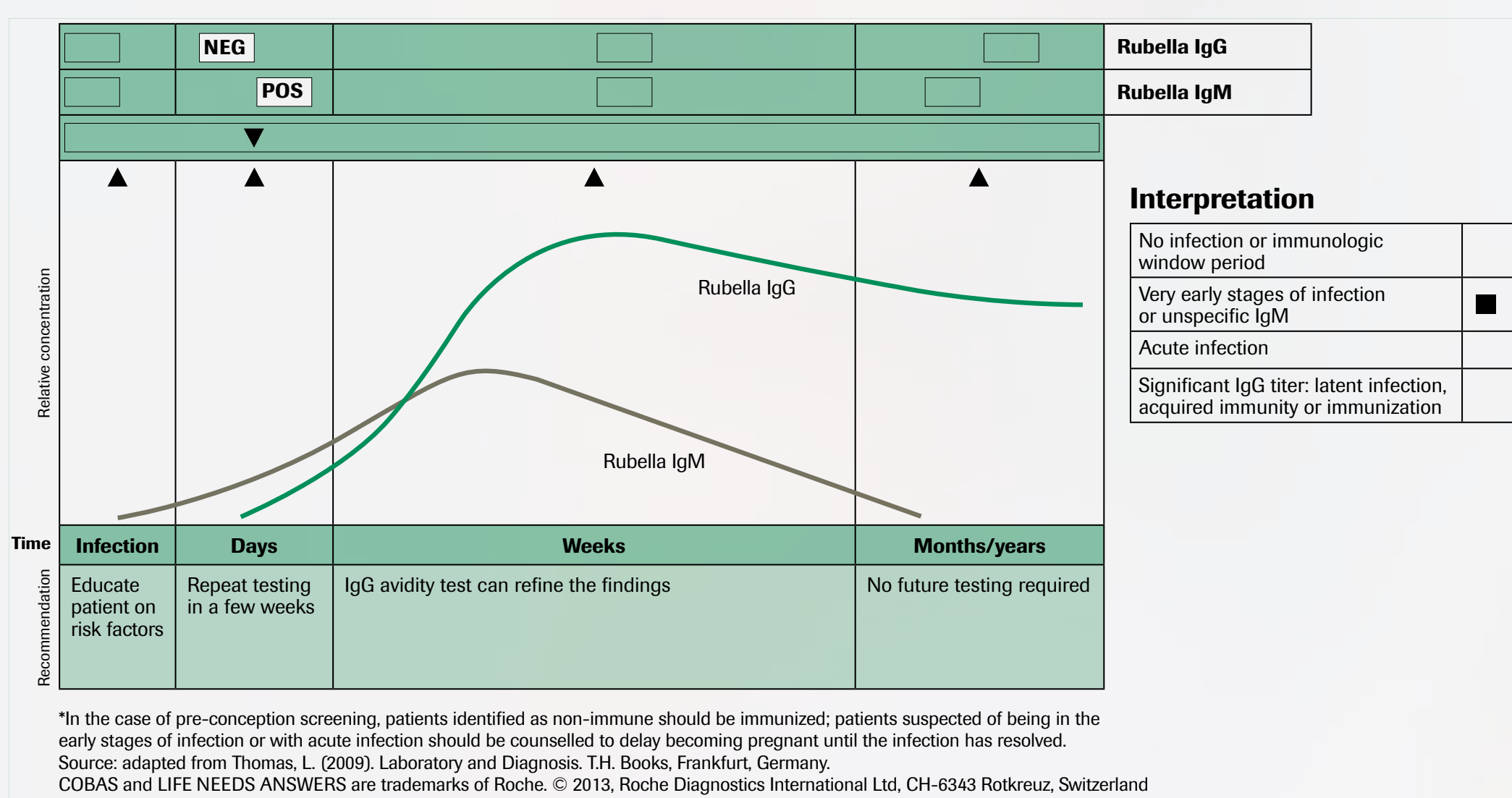


# Pregnancy rubella serology\*



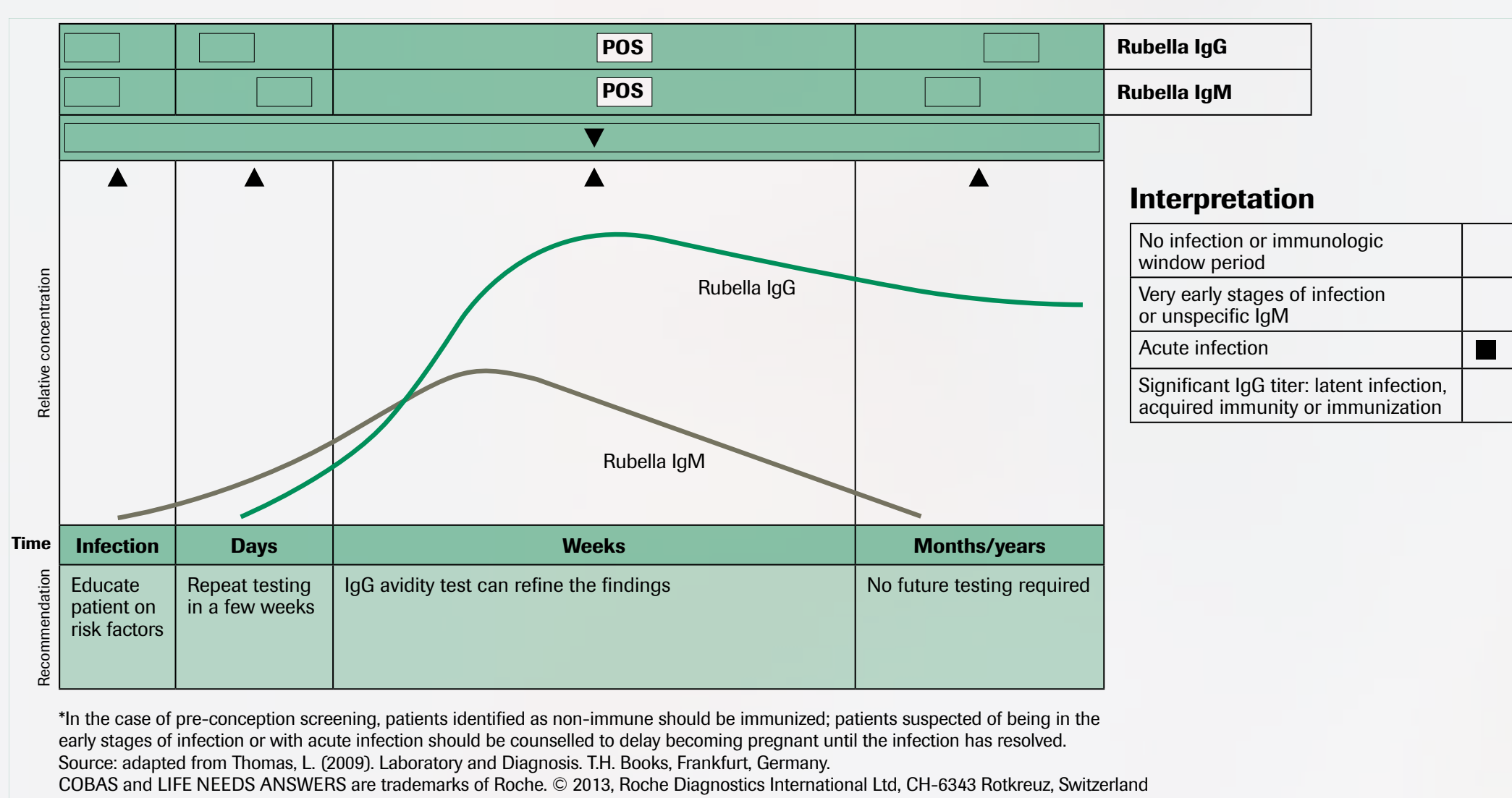


# Pregnancy rubella serology\*



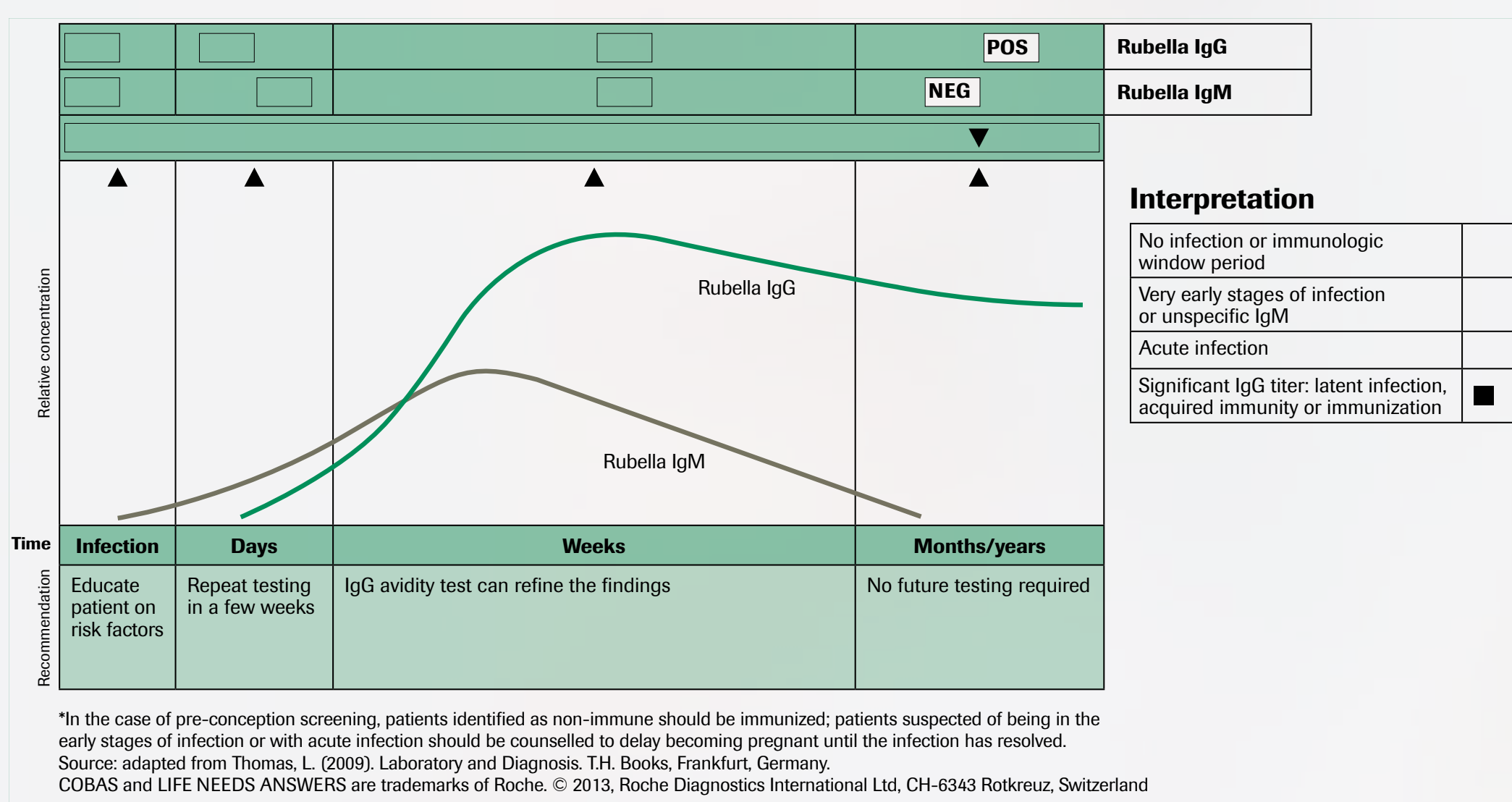


# Pregnancy rubella serology\*





# Pregnancy rubella serology\*



# CMV

## *High precision diagnosis of acute CMV infections*

### **The anti-interference CMV assay**

- Detects the IgM associated with an acute infection by using a novel blocking agent to persistent IgM
- Anti-interference recombinant protein prevents cross reactivity with other herpes viruses
- IgG avidity helps to discriminate between acute and past infections



**Suggested CMV serologic diagnostic algorithm in immunocompetent individuals**



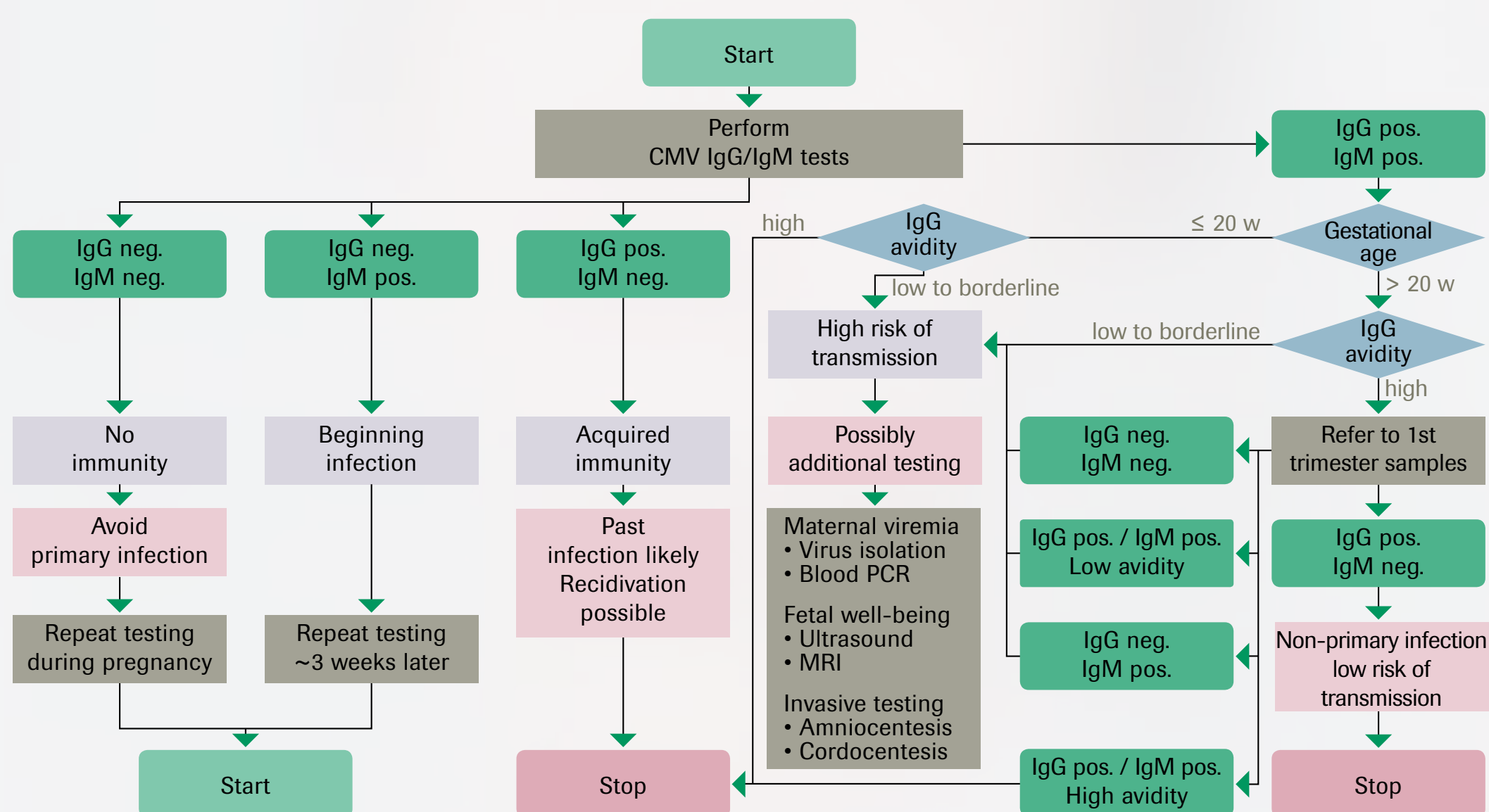
**Pregnancy cytomegalovirus serology**



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## Suggested CMV serologic diagnostic algorithm in immunocompetent individuals



Munro, S.C., Hall, B., Whybin, L.R., et al. (2005). *J Clin Microbiol* 43(9): 4713-8.

Lazzarotto, T., Gabrielli, L., Lanari, M., et al. (2004). *Hum Immunol* 65: 410-415.

Guerra, B., Simonazzi, G., Banfi, A., et al. (2007). *Am J Obstet Gynecol* 196: 221-223.

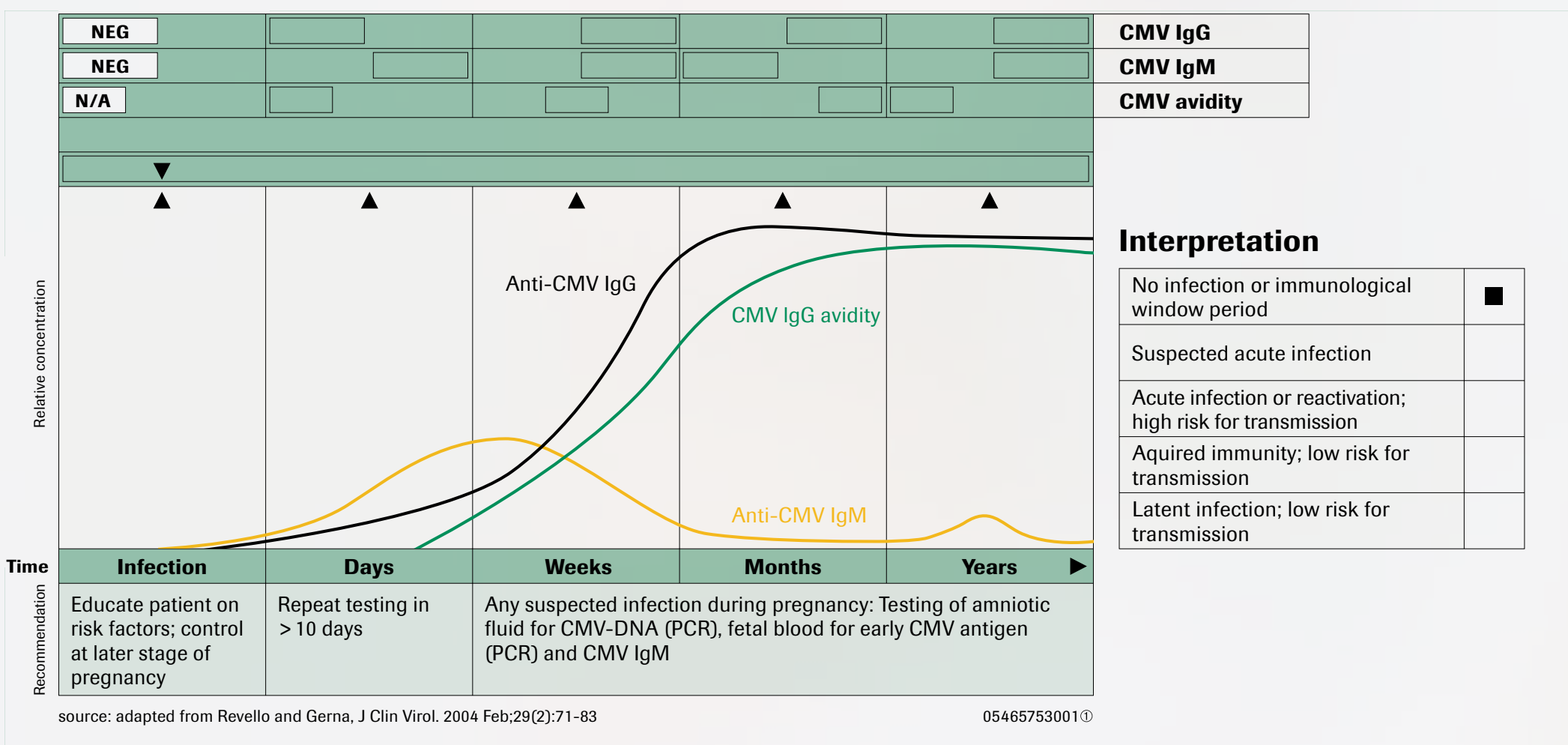
Duff, P. (2007). *A thoughtful algorithm for the accurate diagnosis of primary CMV infection in pregnancy.*

*Am J Obstet Gynecol* 196: 196-197.





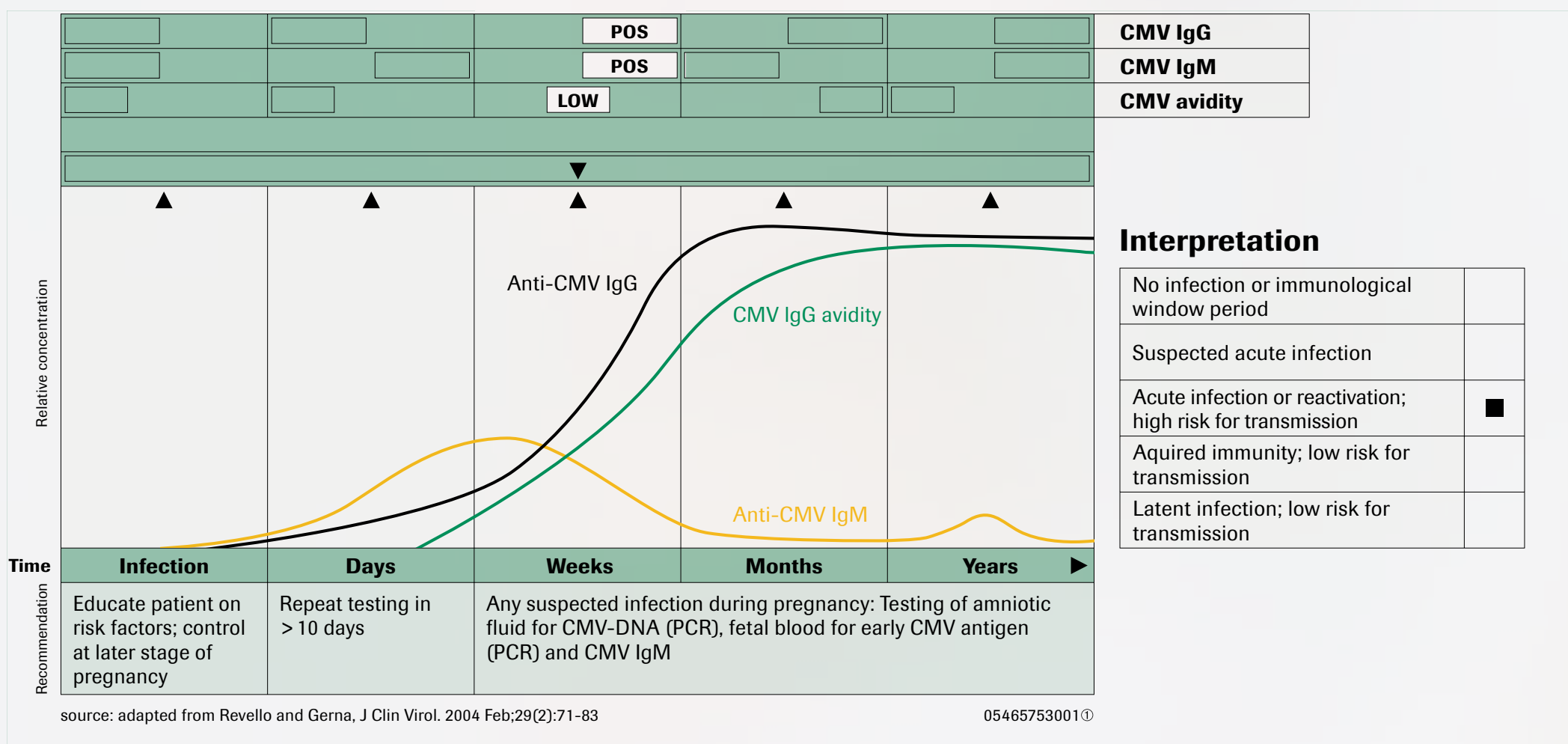
# Pregnancy cytomegalovirus serology





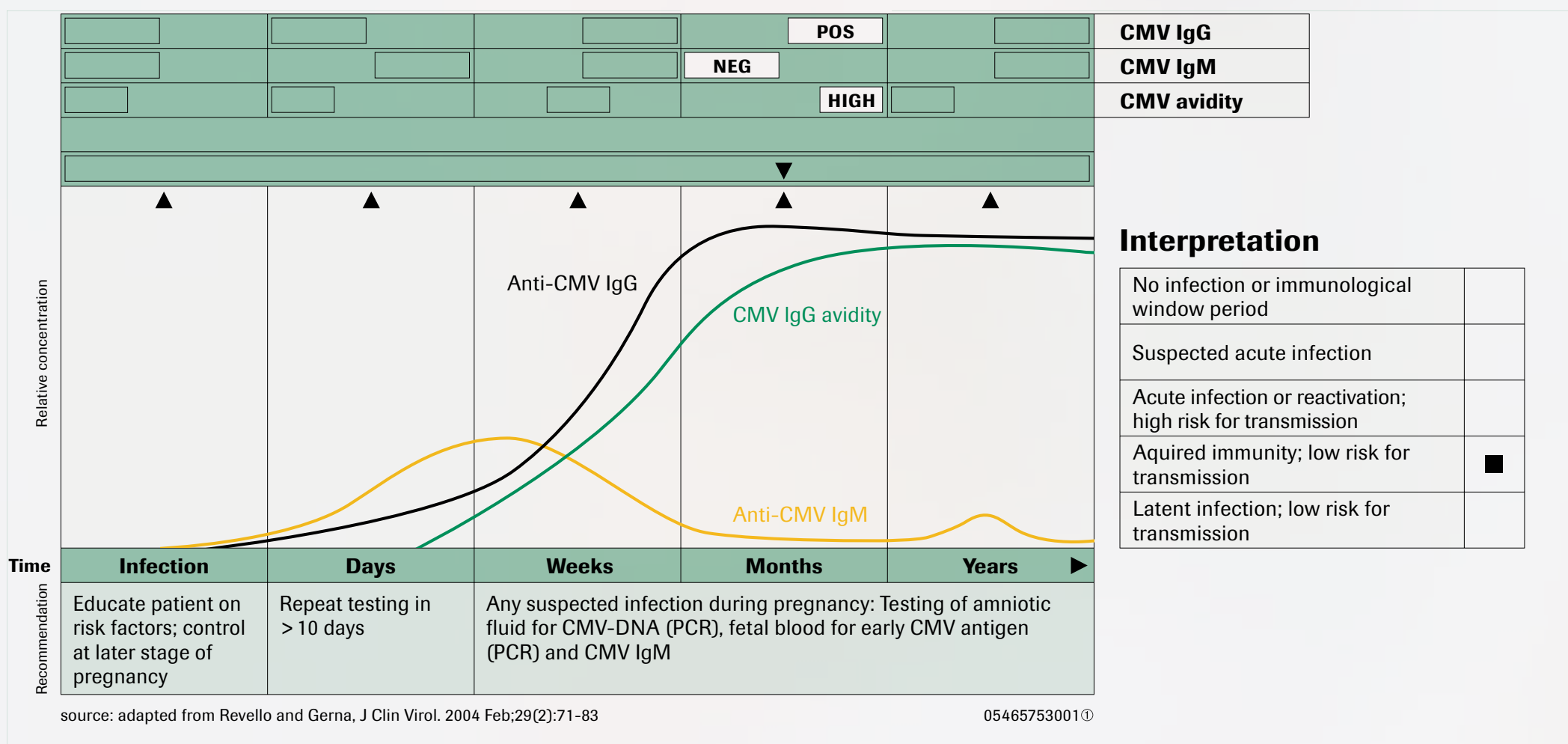


# Pregnancy cytomegalovirus serology



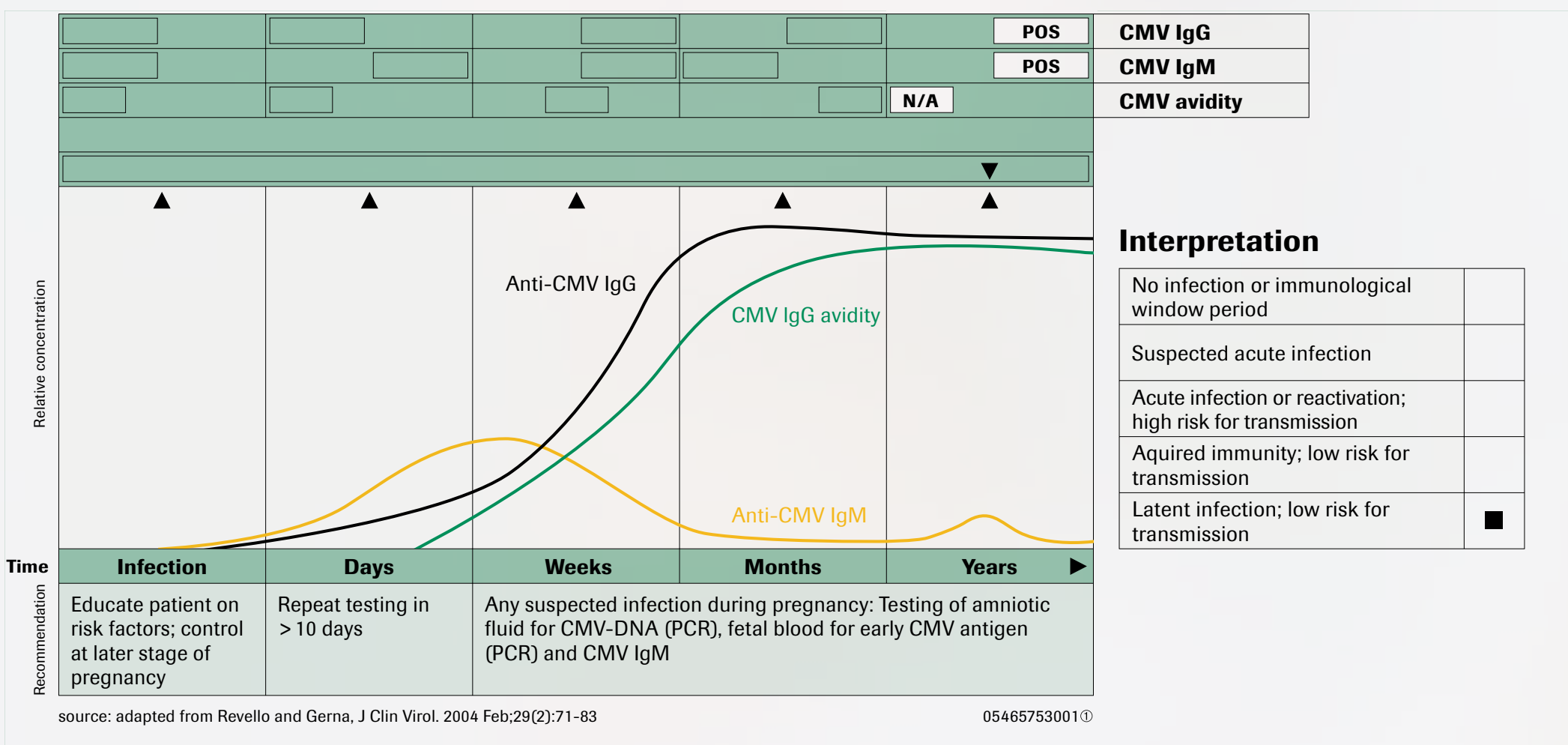


# Pregnancy cytomegalovirus serology





# Pregnancy cytomegalovirus serology



# HSV

## *The new generation of HSV testing*

### **The right menu**

- The relevant tests to assess congenital risk

### **The anti-interference approach**

- Prevents cross reactivity with other herpes viruses
- Prevents cross reaction between HSV 1 and HSV 2



**Diagnosis of HSV infections**



**Assessing the risk of congenital HSV transmission**



**The Power of synergy (Serology & PCR)**

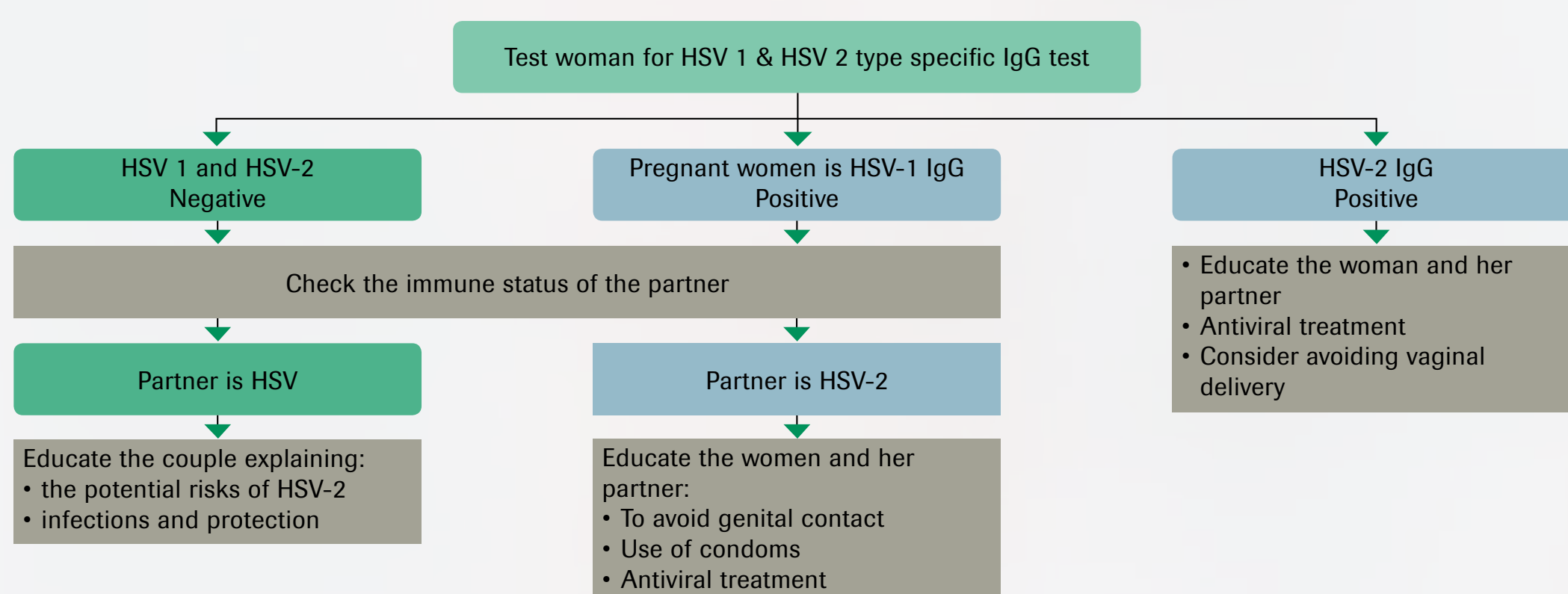


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# The new generation of HSV testing

## *For informed pregnancy management*

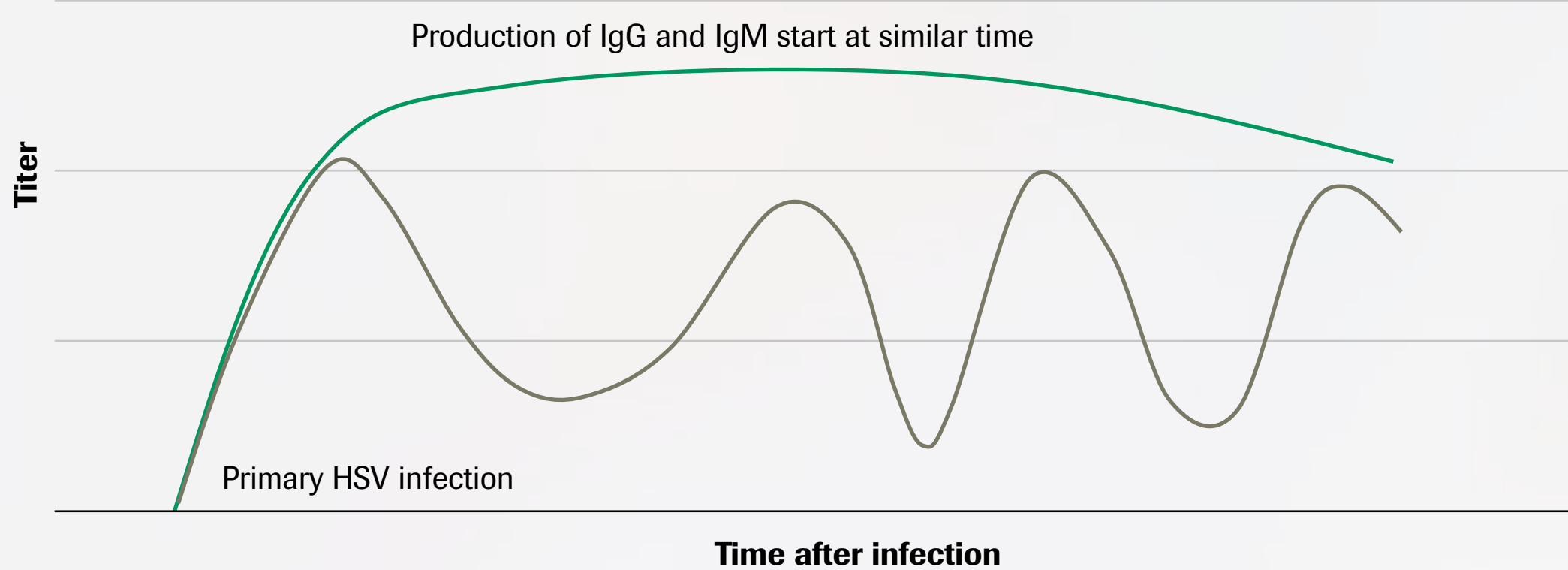


Adapted from Brown et al. *Obstet Gynecol* 2005; 106:845-856 and *Bulletin of the World Health Organization* 2008; 86: 737-816.



## Assessing the risk of congenital HSV transmission

- HSV type 1 & 2 specific IgG
- IgM testing is not reliable
  - Cross-reaction with other Herpesviridea group viruses
  - IgM serology cannot distinguish acute infection from the recurrent disease
- HSV-IgM antibodies may persist many months or years



*IgM tests do not allow proper differentiation between primary and persistent infection.*

*Cowan et al. (2000 Apr) J Antimicrob Chemother. 45 Suppl T3, 9-13.*

*Song et al. (2004 Apr) Sex Transm Infect. 80(2), 113-7.*

*Page et al. (2003 Aug) Sex Transm Infect. 79(4), 276-9.*





## Elecsys® HSV-1 IgG & HSV-2 IgG

### *HSV IgM tests are not useful in adults*

#### **Expert opinions:**

*“IgM blood tests do not accurately distinguish between the types of herpes virus and cannot accurately tell a new infection from an old one. Unfortunately, many clinicians still order them. In fact, it is probably the biggest mistake clinicians make when doing herpes testing. IgM tests for herpes simplex may also mistakenly pick up other herpes viruses like chicken pox or mono. IgM tests for herpes diagnosis in adults should be avoided completely.”*

*T. Warren; Herpes: everything you need to know; p. 54; 2009.*

*“Bottom lines: Sometimes a new HSV infection in an adult indeed will be positive by IgM before IgG. But this is pretty infrequent, and it outweighed by the downsides: high risk of false positive result; and even when truly positive, there is no distinction between HSV-1 and HSV-2, which is pretty important to most patients and providers.”*

*T. H. Hunter Handsfield, M.D.; <http://www.medhelp.org/posts/STDs/Confusiion-over-other-IgM-Herpes-posts/show/248394>as ; 2006.*



## Herpes HSV-1 and HSV-2 serology and PCR assays from Roche

*The power of synergy: Differentiation of primary from recurrent infection*

### Asymptomatic testing (Serology)

Elecsys HSV-1 and HSV-2 assays run on **cobas**<sup>®</sup> 4000, 6000 or 8000 analyzer series

### Symptomatic testing (PCR)

**cobas**<sup>®</sup> HSV 1 and 2 Test in **cobas**<sup>®</sup> 4800 system



### Differentiation of primary from recurrent HSV infections

+ PCR  
- Serology

**New HSV infection**

+ PCR  
+ Serology

**Recurrent HSV infection**