The Pool Looks Clean

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EHS-Net Program

- Started with Food 2000
- Water in 2005
- CA received funding 2007
- First 2 1/2 years looked at drinking water
- State specific projects
- MFF, Capacity, Recreational Health

Recreational Water Illnesses

Objectives

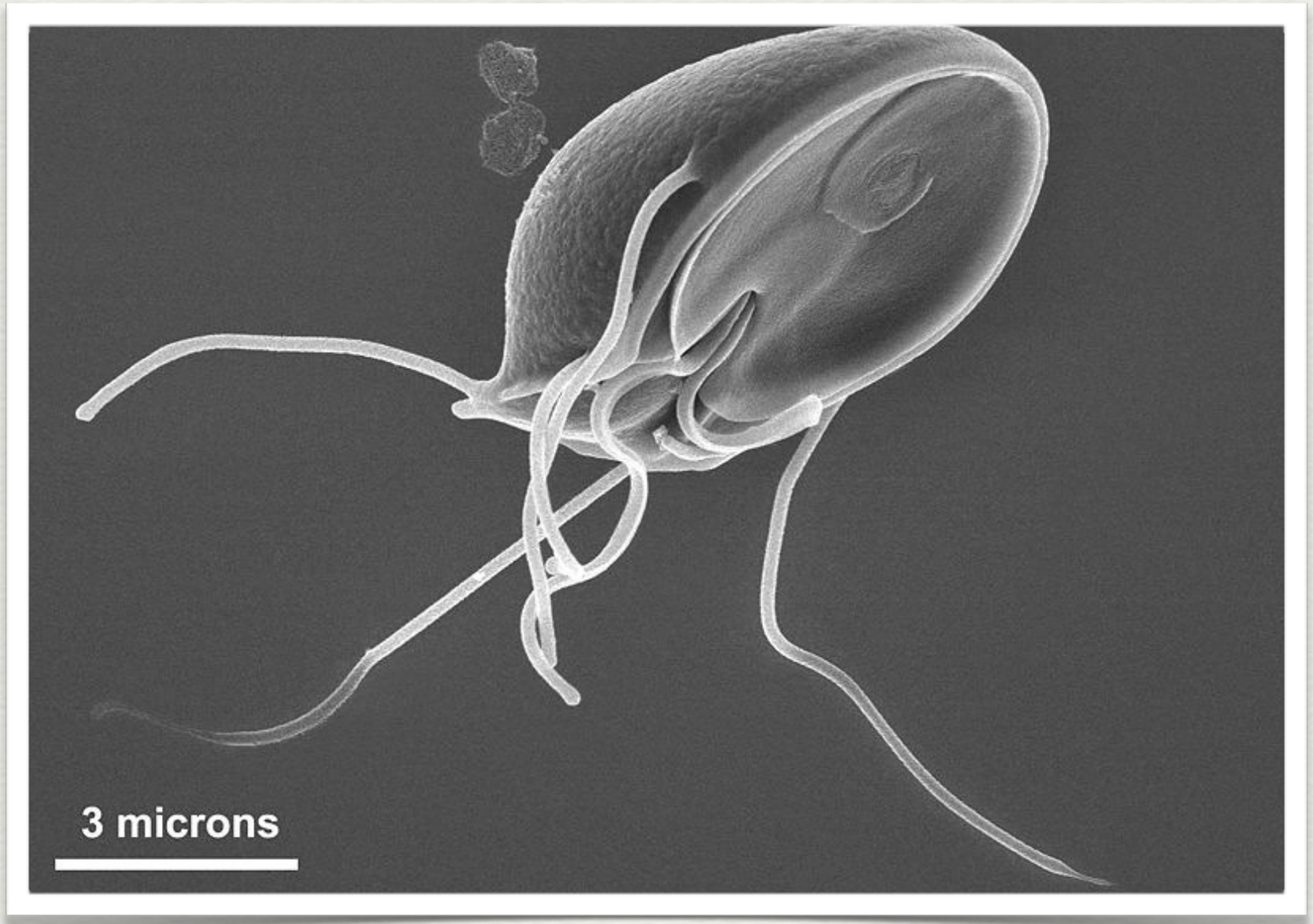
- What organisms are of concern?
- What role does pH play with disinfection?
- Why should I be concerned about cyanuric acid?
- What can be done to reduce waterborne illness?

Recreational Water Illness

- How are they spread?
- What are the 2 types?
- What type of organisms contribute to RWI?

Fecal Related Organisms

- Cryptosporidium
- Giardia
- E. coli
- Shigella
- Norovirus



Cryptosporidium

- Resistant to Cl
- 800,000 released in 1 accident
- 10 cysts cause infection
- Public education important
- Fecal oral route

Giardia

- Form cysts
- Not as resistant to Cl as crypto
- Can be destroyed in 45 mins at 1 ppm Cl at pH 7.5
- Fecal oral route

Escherichia coli

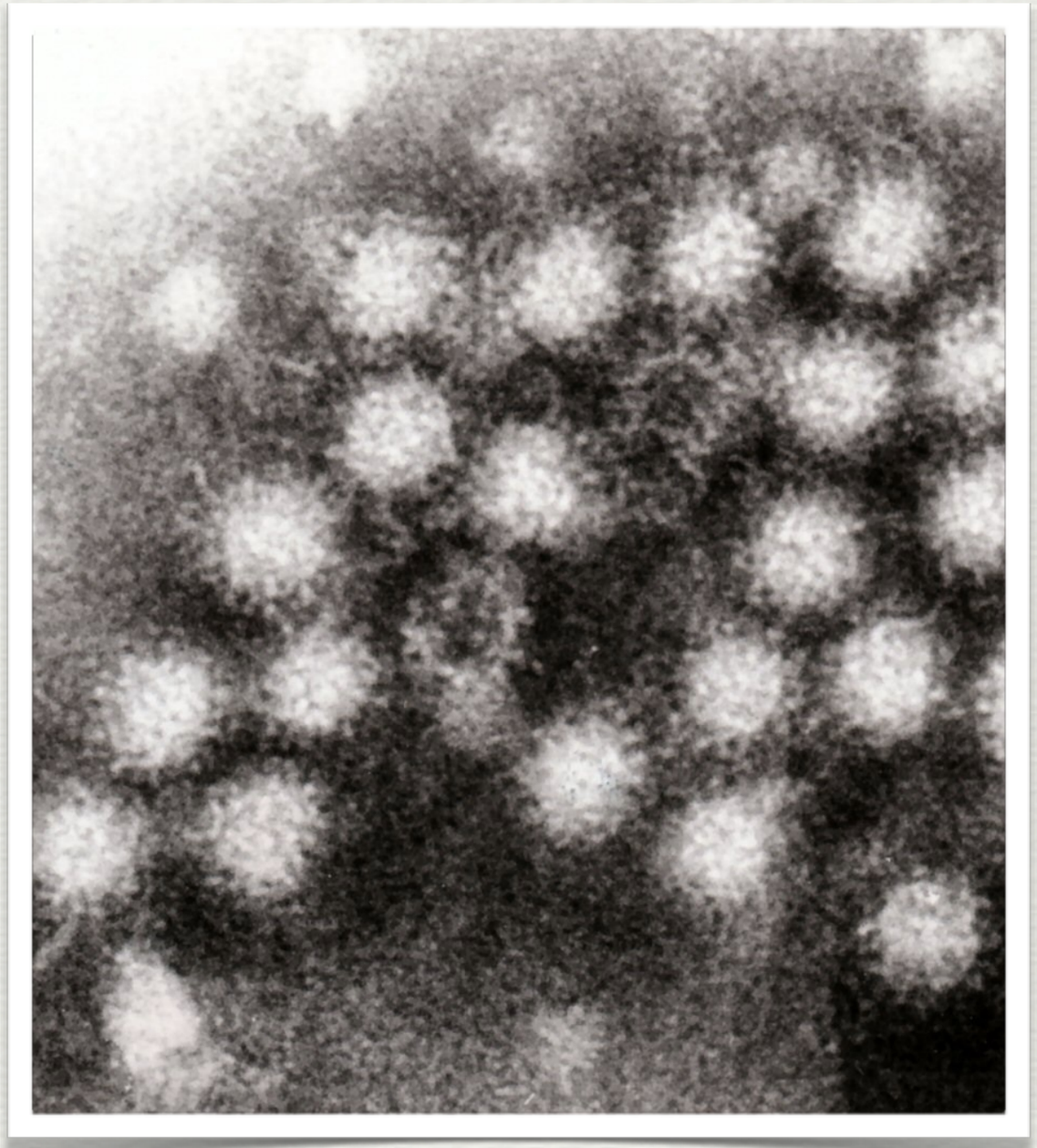
- Severe stomach cramps
- Diarrhea, vomiting
- Usually self-limiting
- Sensitive to proper disinfection

Shigella

- Toddlers 2-4 most likely to get
- Fever, diarrhea, stomach cramps
- Sensitive to disinfection

Norovirus

- Found in stool and vomit
- Nausea, vomiting, diarrhea, stomach cramps
- Illness begins suddenly



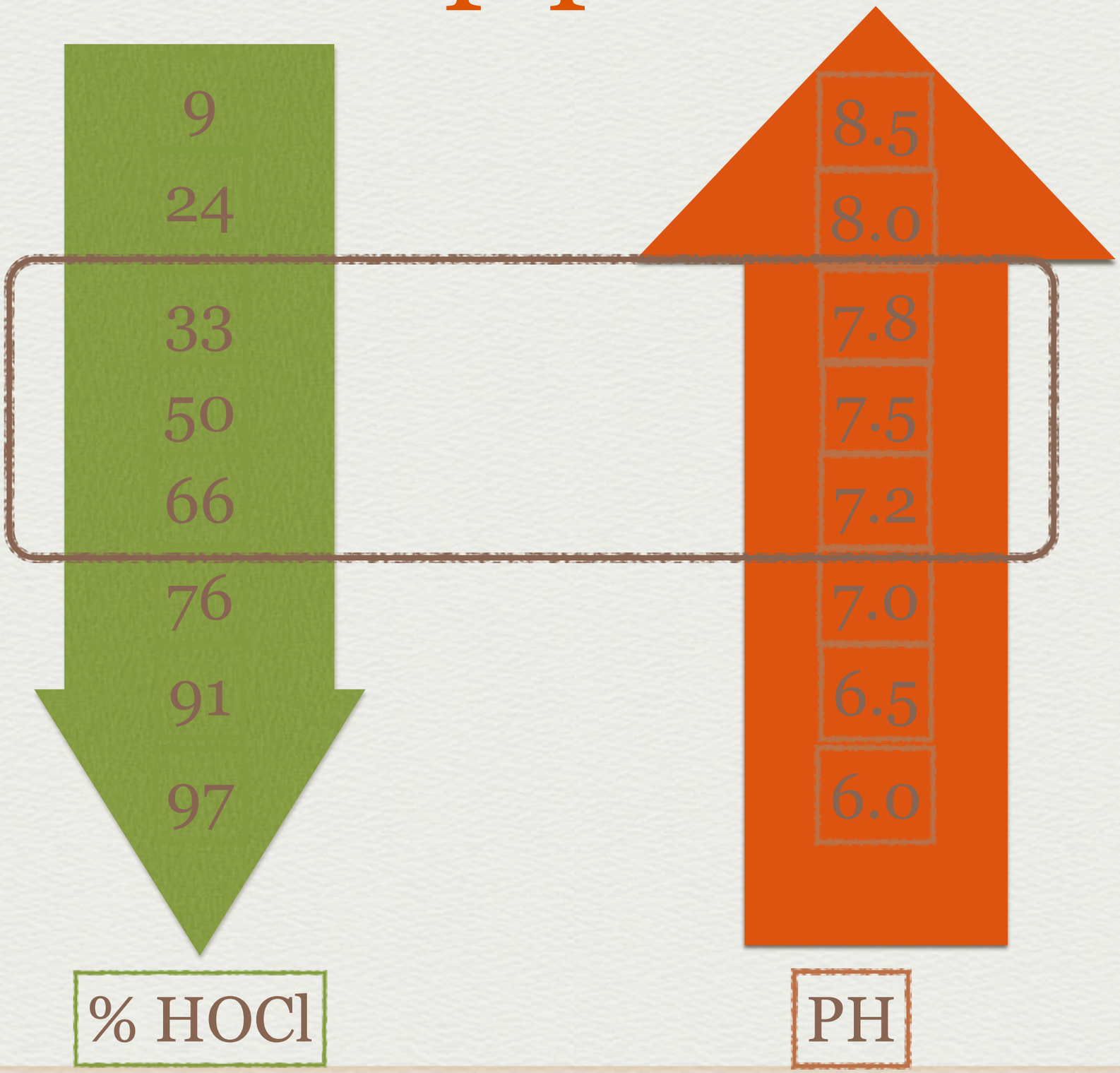
Non-Fecal Related Organisms

- Pseudomonas
- Swimmer's ear
- Legionella
- Methicillin Resistant Staphylococcus aureus
- Plantar warts
- Athlete's foot

What does pH have to do with it?

- As pH increases, hypochlorous acid (HOCl) decreases
- HOCl is the killing form of Cl
- At pH 7.5, only 50% of free chlorine (FC) is HOCl
- At pH 7.2, 66% of FC is HOCl

Relationship pH to HOCl



Cyanuric Acid

- Stabilizes FC
- Maximum amount
- Need more Cl when CyA is present to inactivate organisms

What Can We Do to Reduce RWI ?

- Education
- Make sure facilities have procedures
- Communication between departments

Inspections

- Keep track equipment
- If facility makes changes can affect circulation

Procedures

- Why are they important?
- Why should I keep records?
- It is not IF something will happen at a facility, it is WHEN
- How will that something be handled?

Use Your Senses

Sight
Can I see the drain?

Feel
Does the water feel slimy at the water line?

Smell
Does it smell like chlorine?

Hearing
Is the equipment on and sound normal?

Taste
Not a good idea!

Common Sense
Have bathers shower prior to entering the water

Questions

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