

Expanding the Macaque Model of *Trichomonas vaginalis* Infection

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BACKGROUND

Trichomoniasis, caused by *Trichomonas vaginalis*, is a prevalent sexually transmitted infection associated with increased risk of HIV infection.

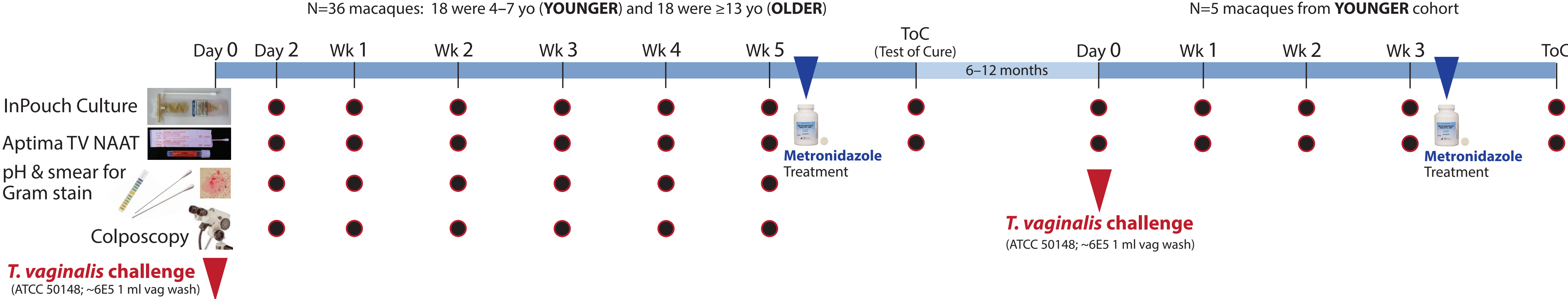
The pigtailed macaque model of *T. vaginalis* infection has been established to advance trichomoniasis research.

PURPOSE

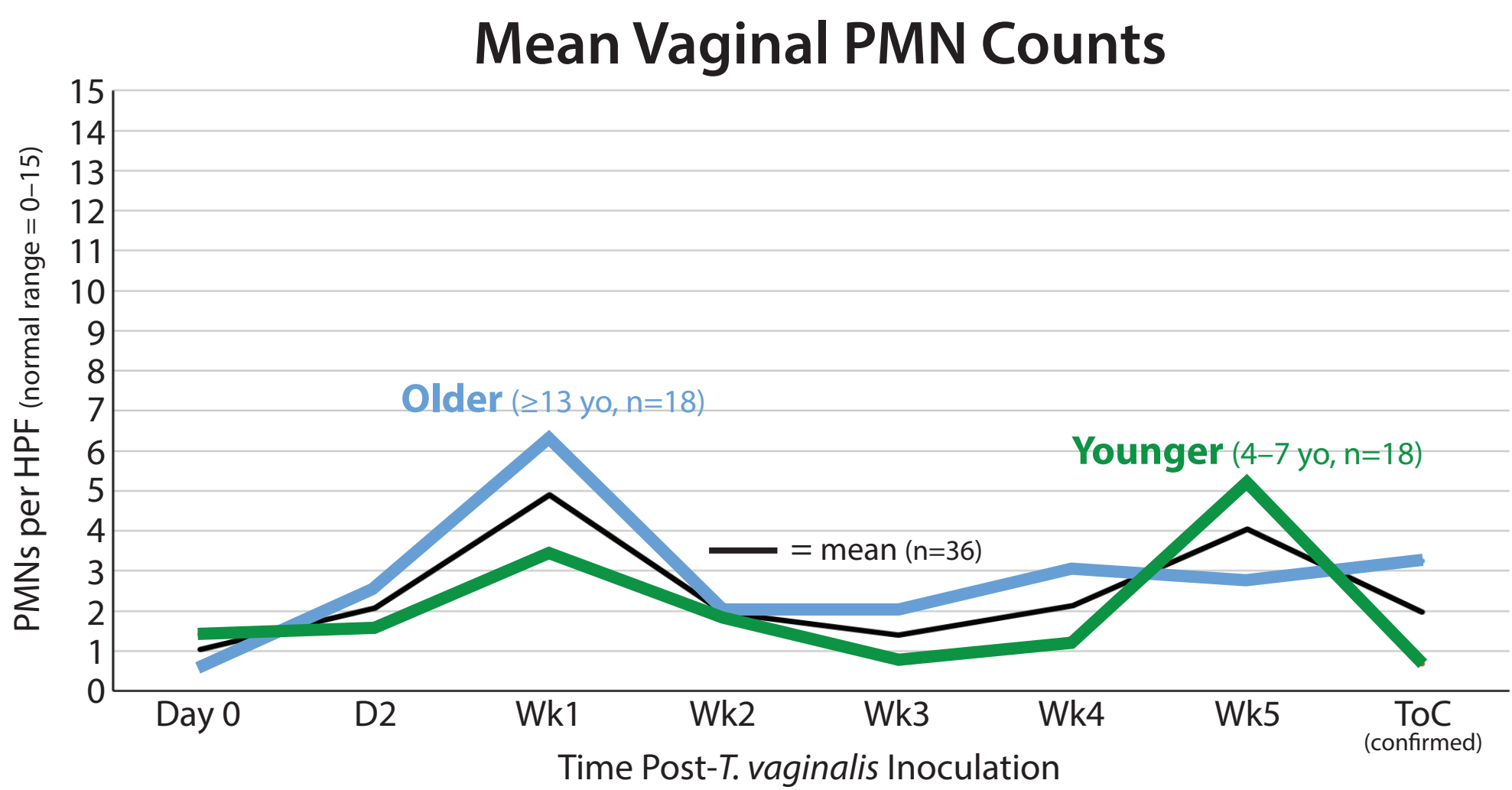
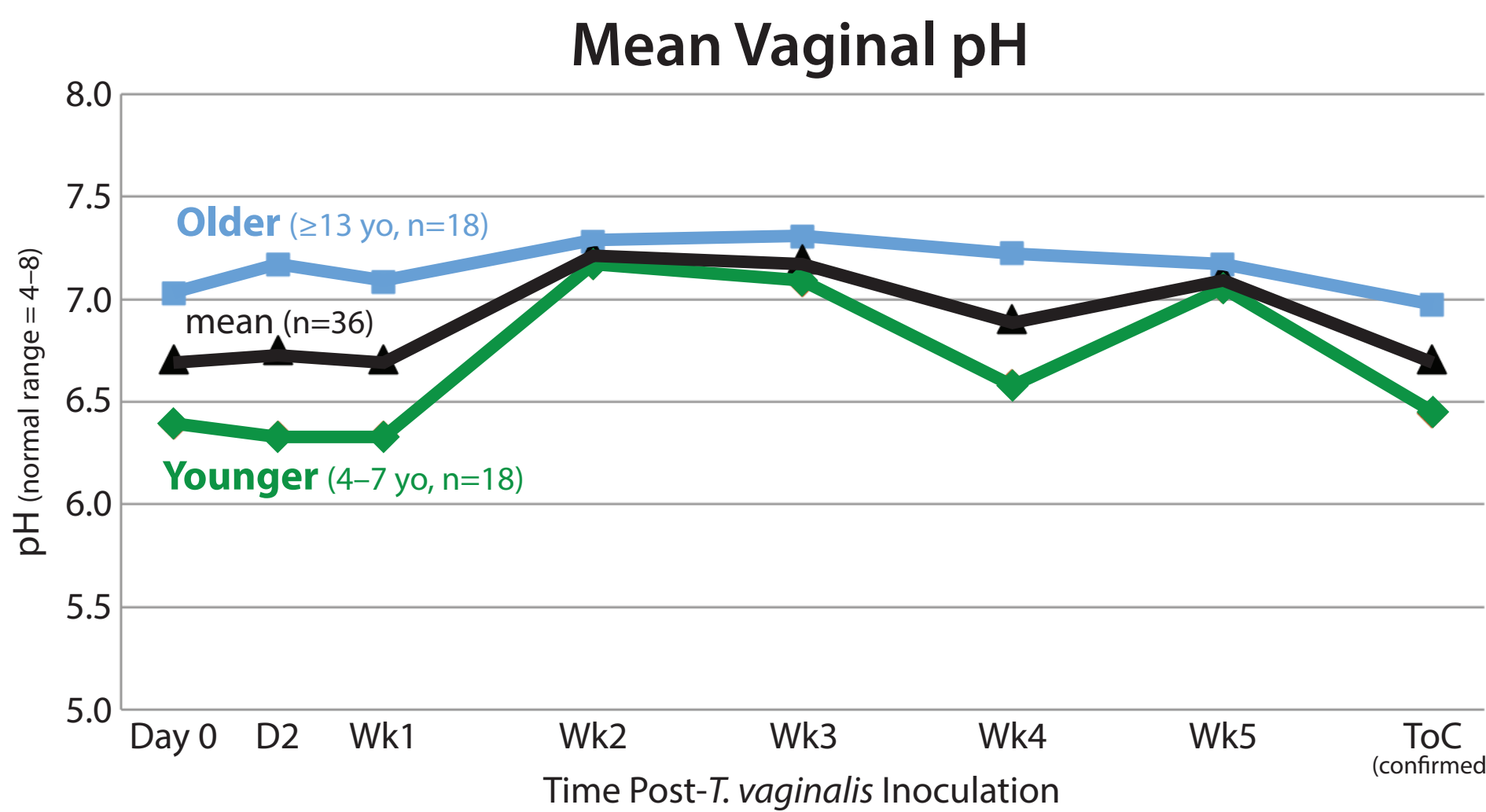
- Compare *T. vaginalis* (TV) detection technologies
- Describe infection status in younger vs older populations
- Test whether TV reinfection after antibiotic clearance is possible in this model

METHODS

Study Design



RESULTS



Detection of *Trichomonas vaginalis* Infection

Animal #	Detection	Day 0	Day 2	Week 1	Week 2	Week 3	Week 4	Week 5	Tx	ToC*	Re-Tx	Re-ToC*
YOUNGER Macaques (4-7 years old) (n=18)	1	InPouch	-	+	+	+	+	+	**Metronidazole (35 mg/kg PO x 3-5 days)	-		
		Aptima	-	+	+	+	+	+		-		
	2	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	3	InPouch	-	+	+	+	+	+		+	**	-
		Aptima	-	+	+	+	+	+		+		-
	4	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	5	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	6	InPouch	-	+	+	+	+	+		+	**	-
		Aptima	-	+	+	+	+	+		+		-
	7	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	8	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	9	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
OLDER Macaques (≥13 years old) (n=18)	10	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	11	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	12	InPouch	-	+	+	+	+	+		+	**	-
		Aptima	-	+	+	+	+	+		+		-
	13	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	14	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	15	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	16	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	17	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	18	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	19	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	20	InPouch	+	+	+	+	+	+		+	**	-
		Aptima	-	+	+	+	+	+		-		-
	21	InPouch	-	+	+	+	+	+		+	**	-
		Aptima	-	+	+	+	+	+		-		-
	22	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	23	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	24	InPouch	-	+	+	+	+	+		+	**	-
		Aptima	-	+	+	+	+	+		-		-
	25	InPouch	+	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	26	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	27	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	28	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	29	InPouch	-	+	+	+	+	+		+	**	-
		Aptima	-	+	+	+	+	+		+		-
	30	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	31	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	32	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	33	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	34	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	35	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		
	36	InPouch	-	+	+	+	+	+		-		
		Aptima	-	+	+	+	+	+		-		

○ = Discrepant culture and NAAT results

*Test of Cure

Colposcopic Findings

		VAGINAL								CERVICAL							
YOUNGER		D0	D2	W1	W2	W3	W4	W5	ToC	D0	D2	W1	W2	W3	W4	W5	ToC
	ECCHY-MOSIS	13	14	11	13	9	14	13	13	13	14	13	12	12	13	13	8
	PETECH-IAE/ECC	4	7	3	5	5	6	3	3	4	3	4	4	2	3	4	2
	FRI-A-BILITY	1	0	1	2	0	2	0	0	0	1	2	1	0	0	0	2
OLDER		D0	D2	W1	W2	W3	W4	W5	ToC	D0	D2	W1	W2	W3	W4	W5	ToC
	ECCHY-MOSIS	15	13	15	13	10	13	13	14	15	14	13	15	11	16	12	15
	PETECH-IAE/ECC	7	6	5	6	4	8	5	4	5	8	6	2	6	6	3	3
	FRI-A-BILITY	0	2	1	2	1	2	0	2	1	1	0	2	2	4	2	1

Summary YOUNGER Cohort (n=18)

	InPouch	InPouch
	+	-
Aptima +	74	12
Aptima -	2	38

RE-INFECTION Subgroup

YOUNGER Cohort (n=5)	InPouch	InPouch
	+	-
Aptima +	9	0
Aptima -	1	10

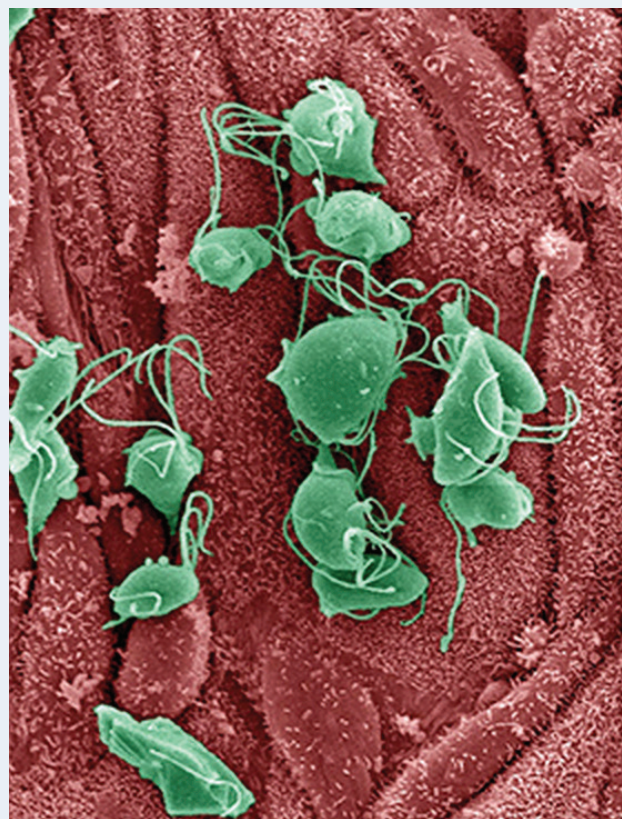
Re-Infection Detection

Animal #	Detection	YOUNGER Cohort (n=5)				ToC*	ToC2
		Day 1	Day 7	Day 14	Day 21	Day 35	Day 56
6	InPouch	-	-	-	-	-	na
	Aptima	-	-	-	-	-	na
8	InPouch	-	+	+	-	-	na
	Aptima	-	+	+	-	-	na
9	InPouch	-	+	+	+	-	na
	Aptima	-	+	+	+	-	na
12	InPouch	-	+	+	+	+	-
	Aptima	-	+	+	+	+	-
14	InPouch	-	+	-	-	-	na
	Aptima	-	+	+	-	-	na

†na = not applicable

Summary OLDER Cohort (n=18)

	InPouch	InPouch
	+	-
Aptima +	86	3
Aptima -	3	34



T. vaginalis, Science magazine Jan 12, 2007

CONCLUSIONS

- The NAAT gave fewer false results, when we had the luxury of a timeline of serial samples to refer to for determining test accuracy.
- Similar infection rates were observed in both age cohorts.
- Older animals had a greater incidence of cervicovaginal irritation, evidenced primarily by friability in this study.
- Younger animals tended to self-clear *T. vaginalis* infection faster than older animals.
- TV re-infection is possible in the macaque model.

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