Colposcopic Biopsy

CWE Redman

UACCP-EFC Advanced Course

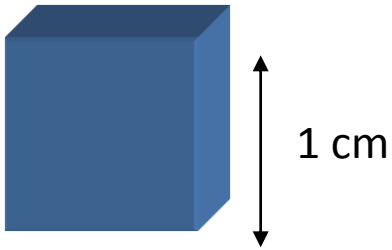
Colposcopic activities

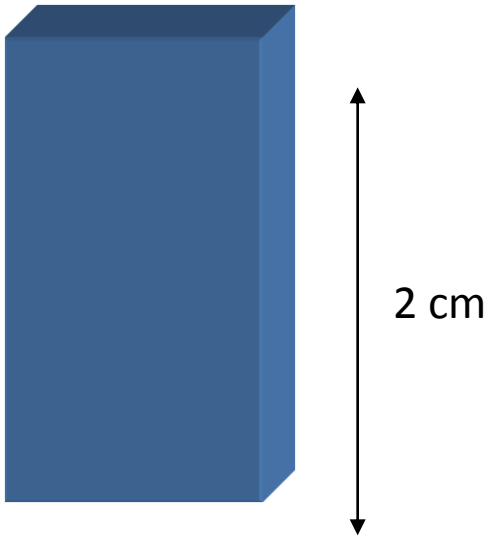
Diagnosis

Selection for biopsy

Selection for treatment

Nomenclature





Punch **(Simple) Loop** **Extended Loop**

Biopsy considerations

Accuracy

Damage

Therapeutics

Effectiveness

Biopsy summary

	Punch	Loop	Extended
Treatment	X	✓	✓
Damage	+/-	+	++
Accuracy	+/-	✓	✓
Effectiveness	?	✓	✓

Biopsy summary

	Punch	Loop	Extended
Treatment	X	✓	✓
Damage	+/-	+	++
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Biopsy summary

	Punch	Loop	Extended
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Biopsy summary

	Punch	Loop	Extended
Treatment	X	✓	✓
Damage	+/-	+	++
Accuracy	+/-	✓	✓
Effectiveness	?	✓	✓

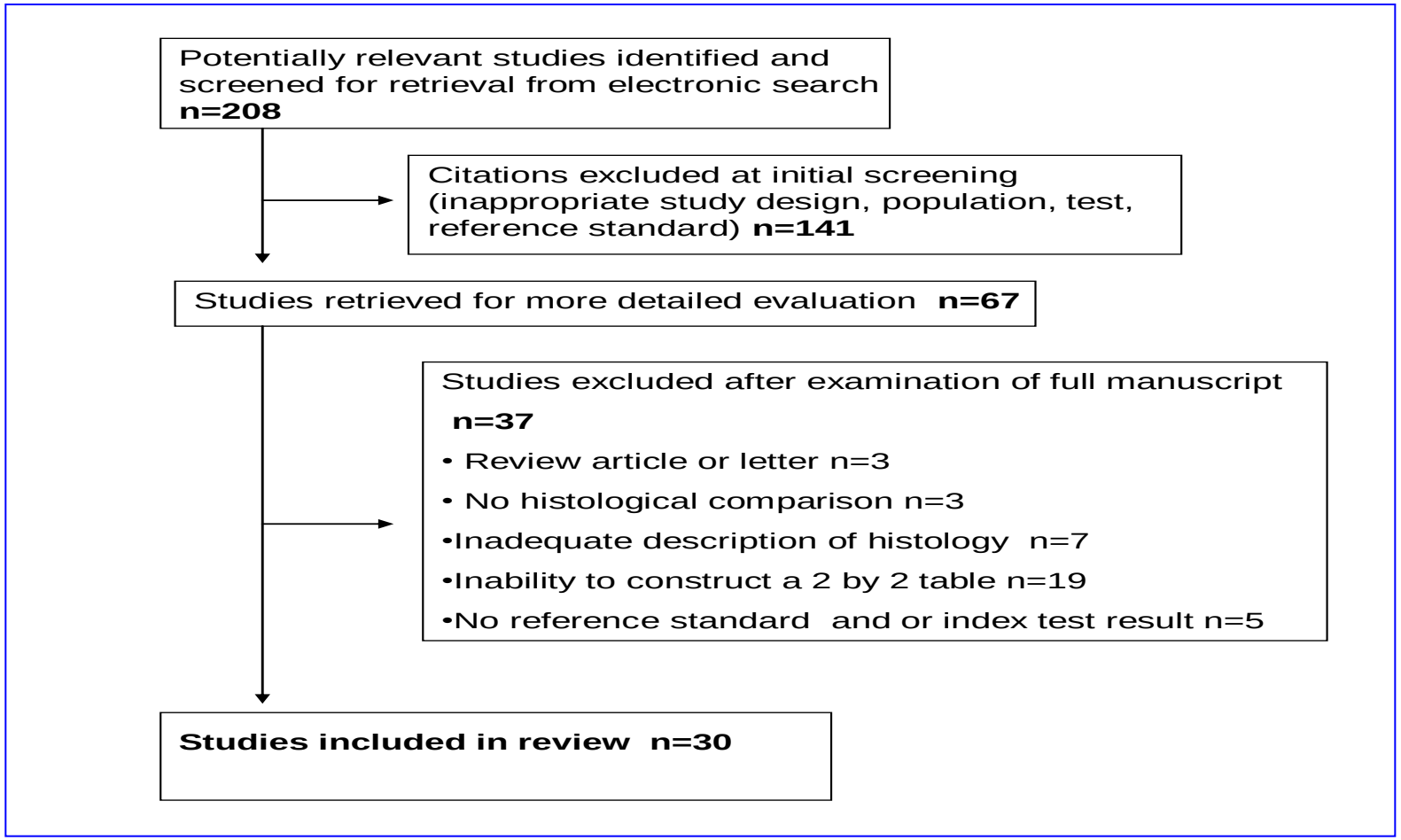
How accurate are punch biopsies?

Accuracy of colposcopic-directed punch biopsies: a systematic review and meta-analysis

M Underwood et al

Br J Obstet Gynaecol 2012; 119:1293-1301

Identifying the literature



Framing the Question

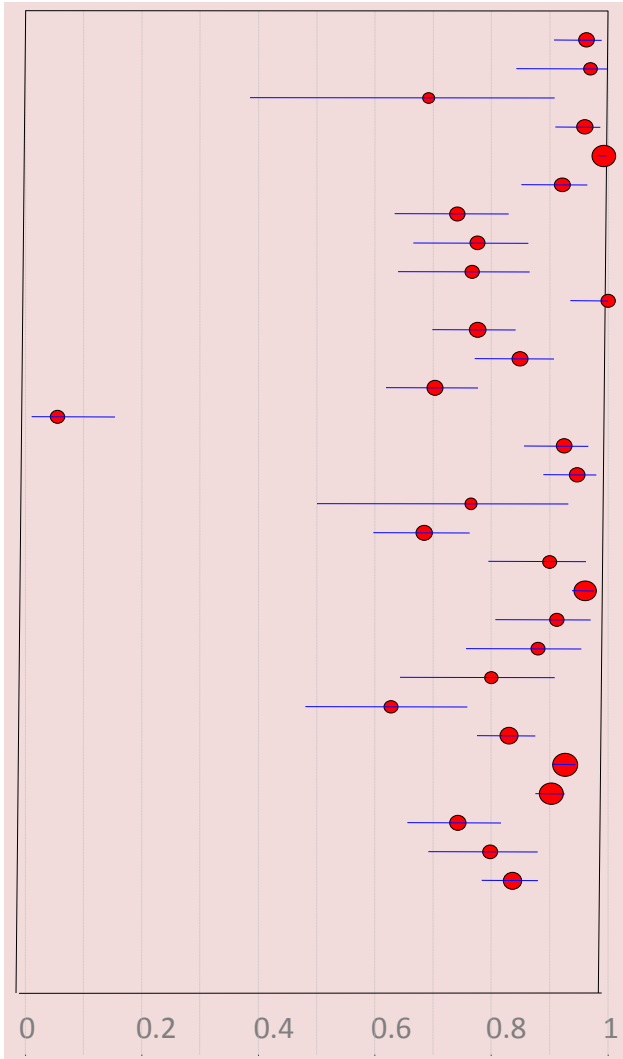
Population:	Women undergoing colposcopy
Index test:	Punch biopsy
Reference test:	LLETZ, cone or hysterectomy

Results

- Thirty-two papers
- 7,873 paired punch/definitive histology results
- Pooled sensitivity 91.3% (95% CI 85.3-94.9%)
- Specificity was 24.6% (95% CI 16.0-35.9%)
- Tests for heterogeneity were significant
- In most studies, the majority had positive punch biopsies.

- Pooling of the four studies where the excision biopsy was performed immediately after the punch biopsy yielded:
- Sensitivity of 81.4% (95% CI 77.6-85.1%, heterogeneity p=0.38)
- Specificity of 63.3% (95% CI 49.2-77.4%, heterogeneity p=0.004)

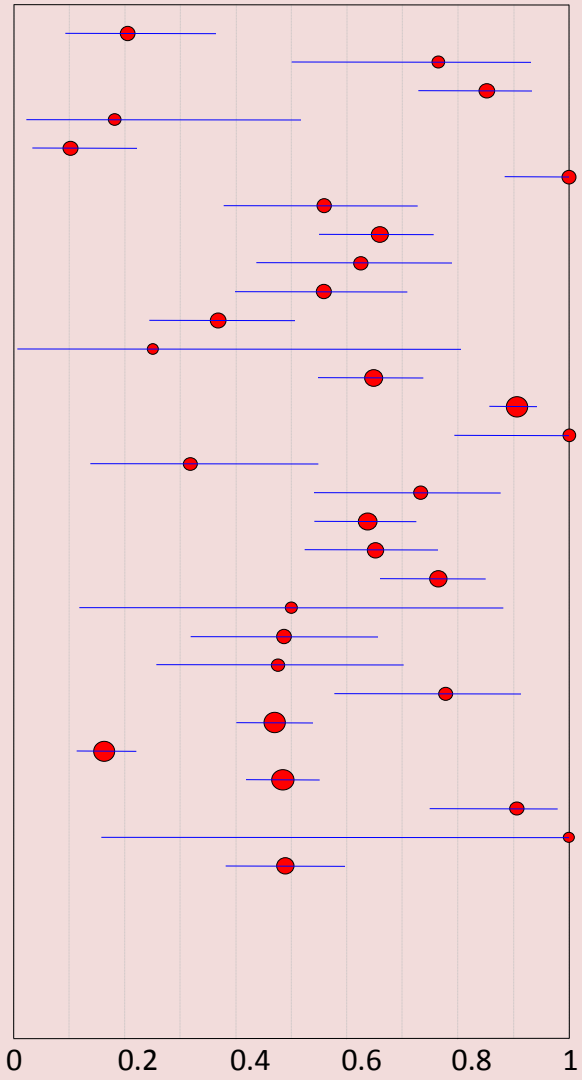
Sensitivity



	Sensitivity (95% CI)
Ortiz	0.96 (0.91 - 0.99)
Savage	0.97 (0.84 - 1.00)
Hovadhanakul	0.69 (0.39 - 0.91)
Kirkup	0.96 (0.91 - 0.99)
Veridiano	0.99 (0.98 - 1.00)
Helmerhorst	0.92 (0.85 - 0.97)
McIndoe	0.74 (0.63 - 0.83)
Cinel	0.78 (0.67 - 0.86)
Skehan	0.77 (0.64 - 0.87)
Chappatte	1.00 (0.94 - 1.00)
Howe	0.78 (0.70 - 0.84)
Vergote	0.85 (0.77 - 0.91)
Buxton	0.70 (0.62 - 0.78)
Bonardi	0.06 (0.01 - 0.15)
Burger	0.92 (0.86 - 0.97)
Srisomboon	0.95 (0.89 - 0.98)
Massad	0.76 (0.50 - 0.93)
Ang	0.68 (0.60 - 0.76)
Powell	0.90 (0.79 - 0.96)
Baldauf	0.96 (0.94 - 0.98)
Heatley	0.91 (0.81 - 0.97)
Fung	0.88 (0.76 - 0.95)
Ihonor	0.80 (0.64 - 0.91)
Lee	0.63 (0.48 - 0.76)
Barker	0.83 (0.78 - 0.88)
Fambrini	0.93 (0.90 - 0.94)
Diakomanolis	0.90 (0.88 - 0.93)
Byrom	0.74 (0.66 - 0.82)
Weigl	0.80 (0.69 - 0.88)
Boonlikit	0.84 (0.78 - 0.88)

Inconsistency (I-square) = 95.0 %

Specificity



	Specificity (95% CI)	
Ortiz	0.21	(0.09 - 0.36)
Savage	0.76	(0.50 - 0.93)
Hovadhanakul	0.85	(0.73 - 0.93)
Kirkup	0.18	(0.02 - 0.52)
Veridiano	0.10	(0.03 - 0.22)
Helmerhorst	1.00	(0.88 - 1.00)
McIndoe	0.56	(0.38 - 0.73)
Cinel	0.66	(0.55 - 0.76)
Skehan	0.63	(0.44 - 0.79)
Chappatte	0.56	(0.40 - 0.71)
Howe	0.37	(0.24 - 0.51)
Vergote	0.25	(0.01 - 0.81)
Buxton	0.65	(0.55 - 0.74)
Bonardi	0.91	(0.86 - 0.94)
Burger	1.00	(0.79 - 1.00)
Srisomboon	0.32	(0.14 - 0.55)
Massad	0.73	(0.54 - 0.88)
Ang	0.64	(0.54 - 0.73)
Powell	0.65	(0.52 - 0.76)
Baldauf	0.76	(0.66 - 0.85)
Heatley	0.50	(0.12 - 0.88)
Fung	0.49	(0.32 - 0.66)
Ihonor	0.48	(0.26 - 0.70)
Lee	0.78	(0.58 - 0.91)
Barker	0.47	(0.40 - 0.54)
Fambrini	0.16	(0.11 - 0.22)
Diakomanolis	0.48	(0.42 - 0.55)
Byrom	0.91	(0.75 - 0.98)
Weigl	1.00	(0.16 - 1.00)
Boonlikit	0.49	(0.38 - 0.60)

Inconsistency (I-square) = 94.1 %

Pooled results

Punch Biopsy	Excision Biopsy CIN2+	
Cutoff	**Sensitivity**	**Specificity**
CIN1+	91%	25%
CIN2+	80%	63%

Sensitivity increases with number of biopsies

Number of biopsies

- Single punch biopsy 90%
- 2 punch biopsies 93%
- Multiple biopsies sensitivity ~ 100%

Interpreting the findings

- Small number of studies identified
- Study quality generally poor
- Wide sensitivity / specificity
- Relatively high sensitivity may be due to verification bias