

Clinical comparison between CIRCUL and PSG Alice Oximeter

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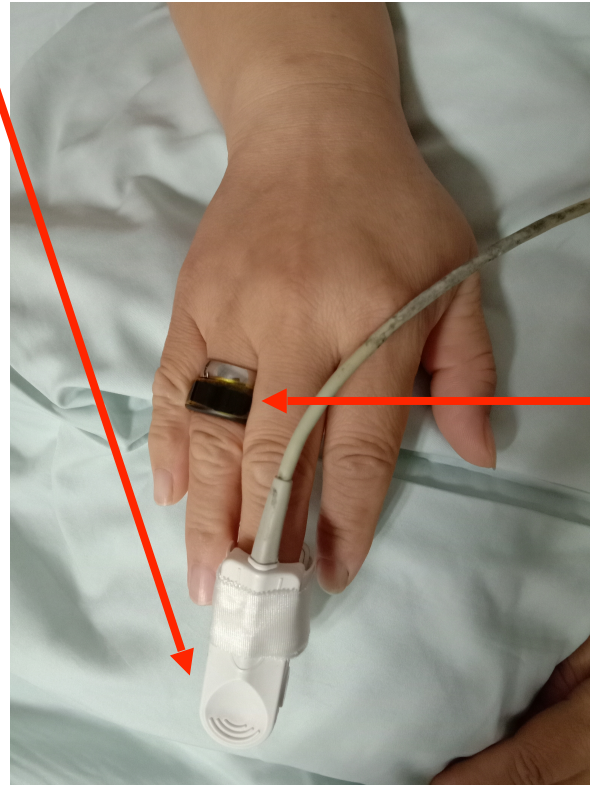


Clinical comparison between CIRCUL and PSG Alice oximeter

Zhejiang University, SRR Shaw Hospital sleep center in china



PSG oximeter



CIRCUL



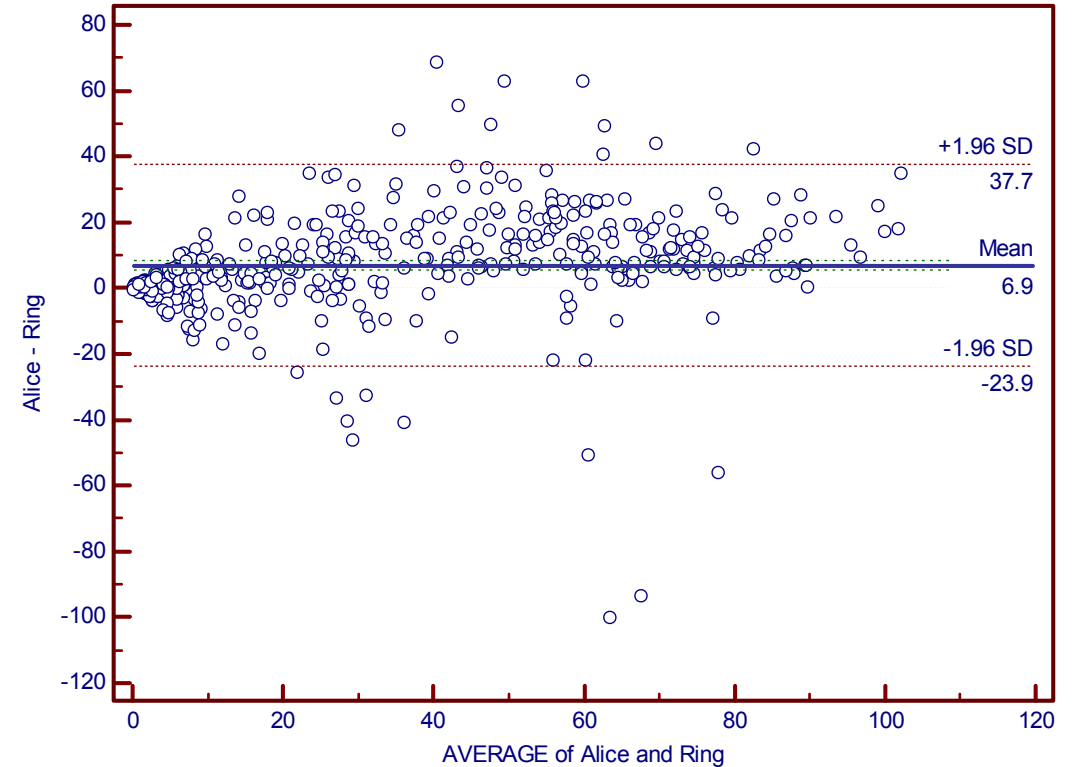
ODI3 SpO2

Sample 1	
Variable	Alice
Sample 2	
Variable	Ring

	Sample 1	Sample 2
Sample size	442	442
Arithmetic mean	36.9095	30.0068
95% CI for the mean	33.9867 to 39.8323	27.5084 to 32.5051
Variance	977.5287	714.2433
Standard deviation	31.2655	26.7253
Standard error of the mean	1.4871	1.2712

Paired samples t-test

Mean difference	-6.9027
Standard deviation	15.7079
95% CI	-8.3711 to -5.4343
Test statistic t	-9.239
Degrees of Freedom (DF)	441
Two-tailed probability	P < 0.0001



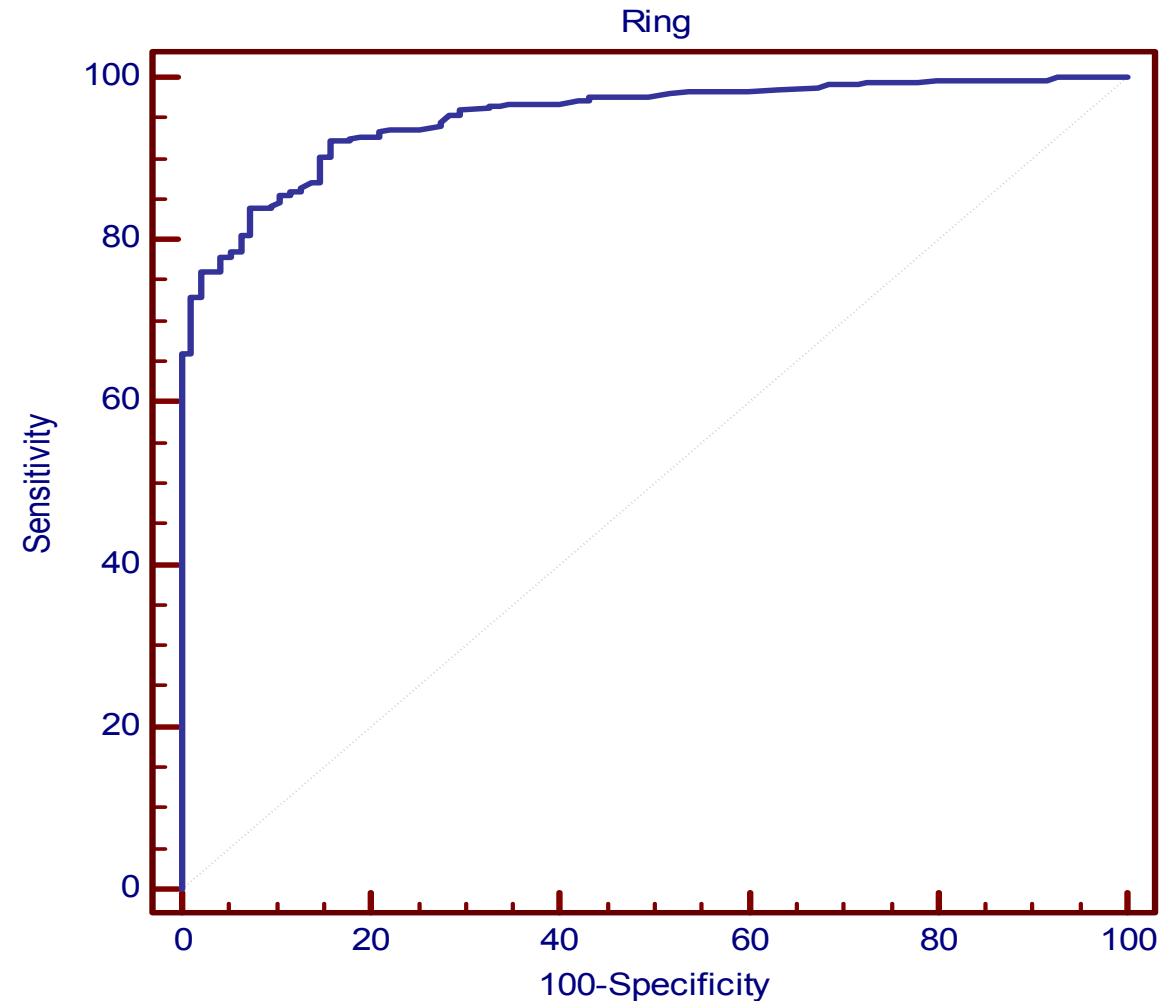
Variable Y	Alice
Variable X	Ring

Sample size	442
Correlation coefficient r	0.8647
Significance level	P < 0.0001
95% Confidence interval for r	0.8391 to 0.8865

Variable	Ring
Classification variable	Mark
Sample size	442
Positive group :	Mark = 1 347
Negative group :	Mark = 0 95
Disease prevalence (%)	unknown
Area under the ROC curve (AUC)	0.951
Standard Error ^a	0.00944
95% Confidence Interval ^b	0.926 to 0.969
z statistic	47.773
Significance level P (Area=0.5)	<0.0001

^a Hanley & McNeil, 1982

^b Binomial exact



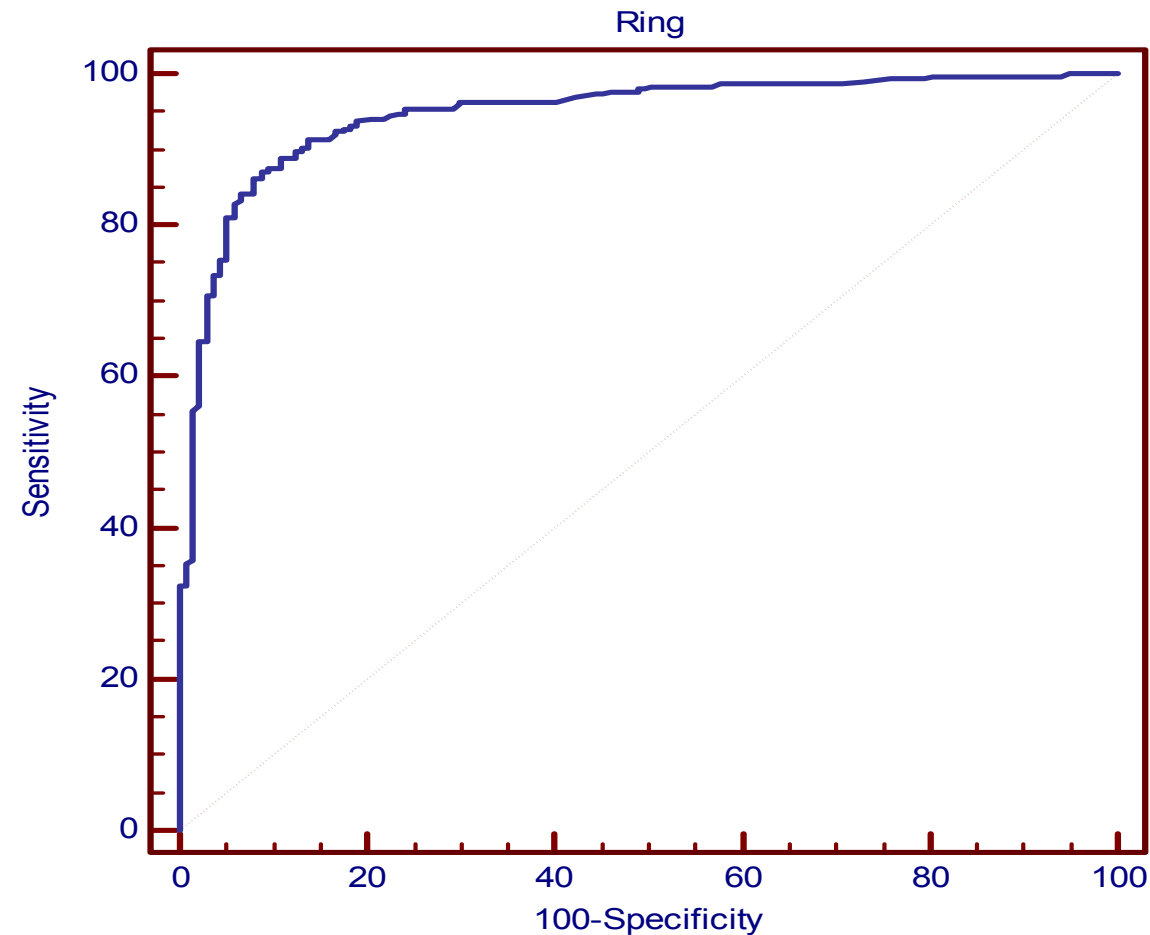
With PSG-ODI \geq 5 times/h as the positive standard for OSAHS diagnosis, the sensitivity of the Ring was 92% and the specificity was 84%.

The ROC curve method was used to evaluate the diagnostic accuracy of the Ring, and the area under the curve was 0.951 (P<0.001).

Variable	Ring		
Classification variable	Mark		
Sample size			442
Positive group :	Mark = 1		305
Negative group :	Mark = 0		137
Disease prevalence (%)			unknown
Area under the ROC curve (AUC)			0.947
Standard Error ^a			0.00997
95% Confidence Interval ^b			0.922 to 0.966
z statistic			44.804
Significance level P (Area=0.5)			<0.0001

^a Hanley & McNeil, 1982

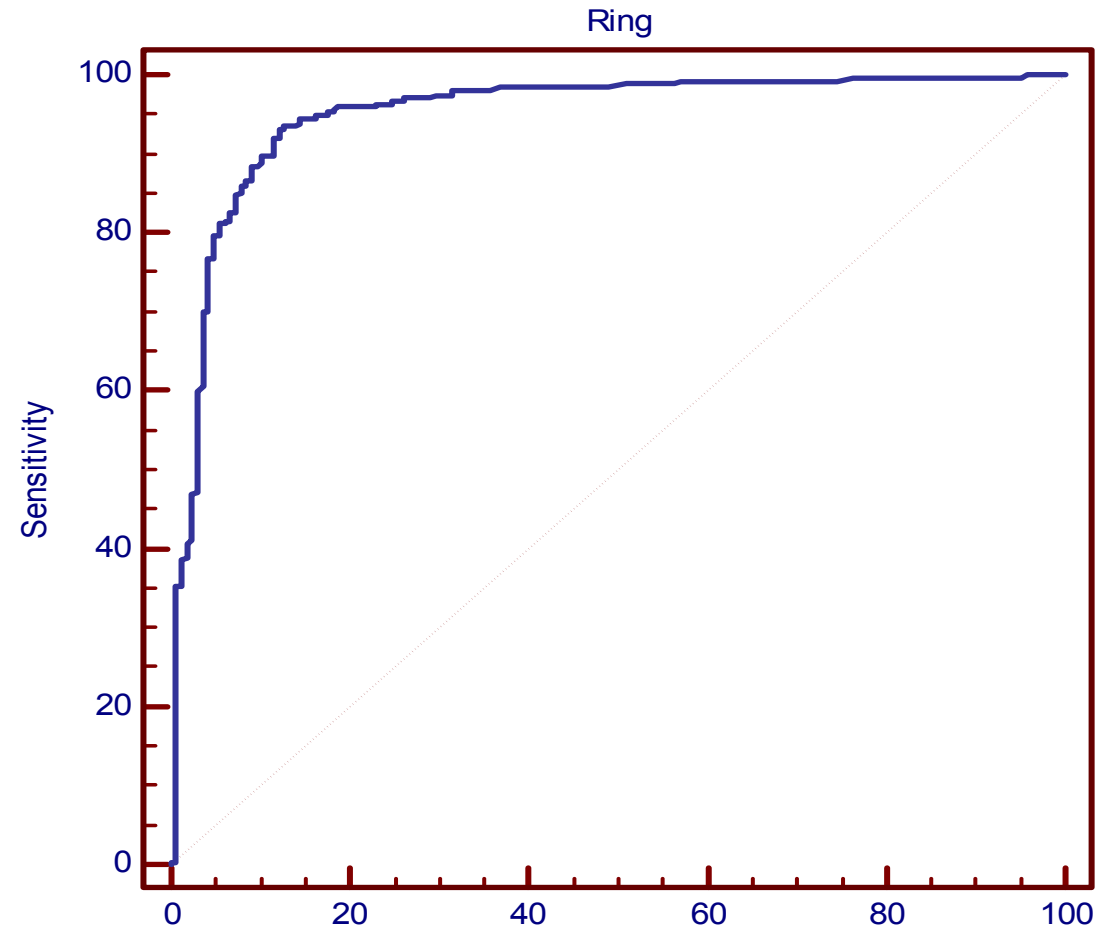
^b Binomial exact



With PSG-ODI \geq 10 times/h as the positive standard for OSAHS diagnosis, the sensitivity of the Ring was 90% and the specificity was 87%.

The ROC curve method was used to evaluate the diagnostic accuracy of the Ring, and the area under the curve was 0.947 (P<0.001).

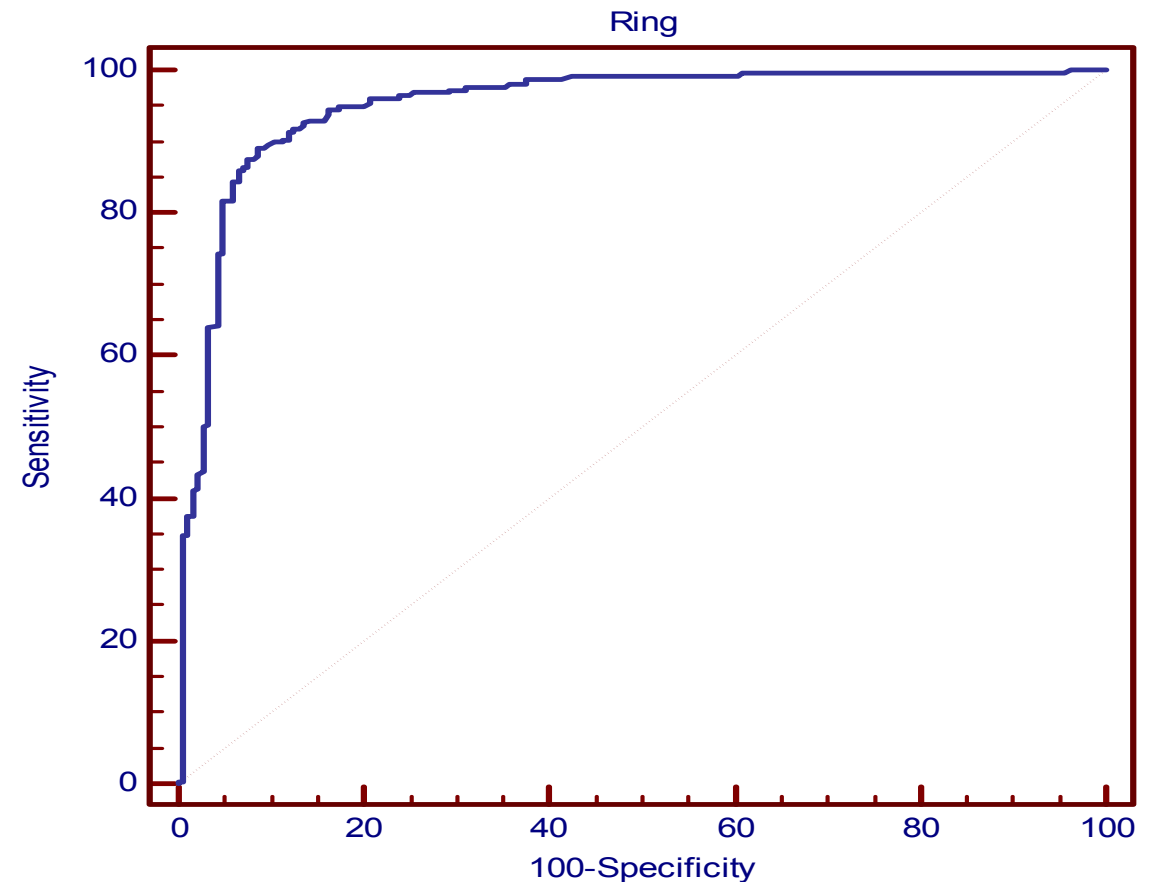
Variable	Ring	
Classification variable	Mark	
Sample size		442
Positive group :	Mark = 1	277
Negative group :	Mark = 0	165
Disease prevalence (%)		unknown
Area under the ROC curve (AUC)		0.950
Standard Error ^a		0.00987
95% Confidence Interval ^b		0.926 to 0.968
z statistic		45.599
Significance level P (Area=0.5)		<0.0001



With PSG-ODI \geq 15 times/h as the positive standard for OSAHS diagnosis, the sensitivity of the Ring was 89% and the specificity was 90%.

The ROC curve method was used to evaluate the diagnostic accuracy of the Ring, and the area under the curve was 0.950 (P<0.001).

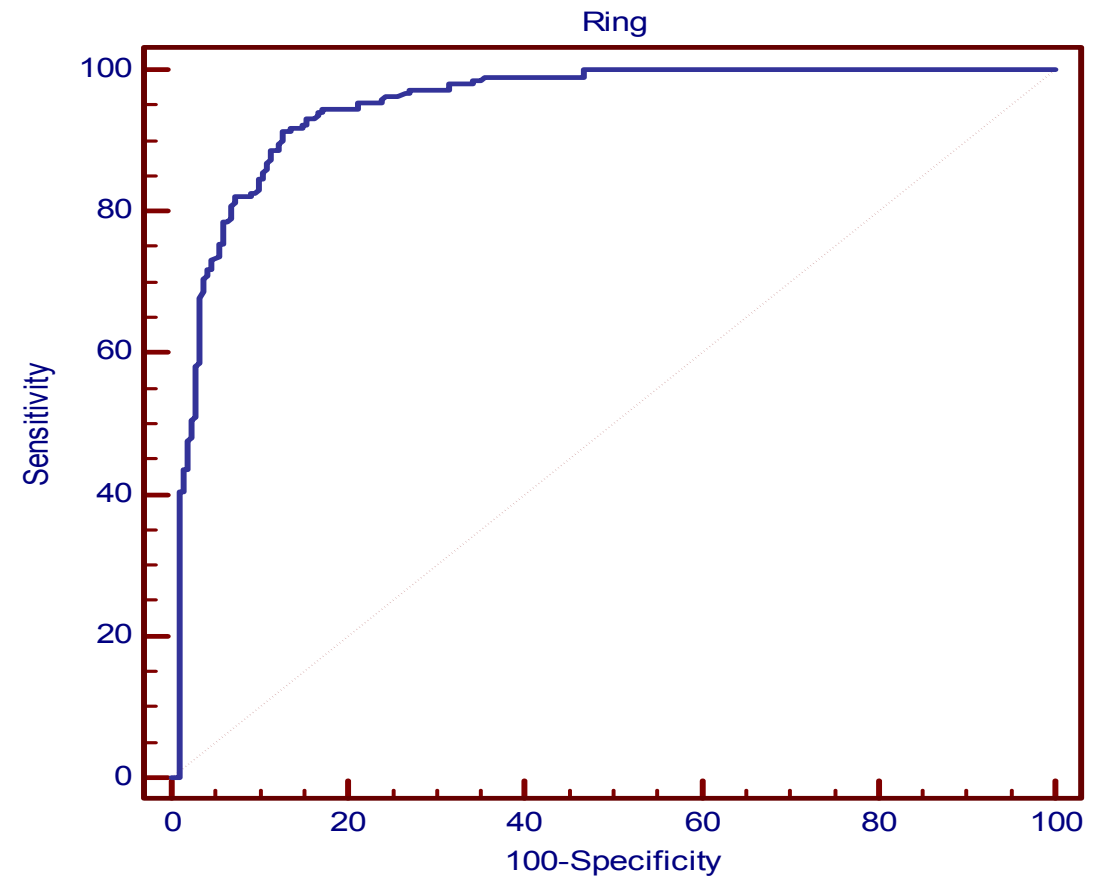
Variable	Ring	
Classification variable	Mark	
Sample size		442
Positive group :	Mark = 1	258
Negative group :	Mark = 0	184
Disease prevalence (%)		unknown
Area under the ROC curve (AUC)		0.951
Standard Error ^a		0.0100
95% Confidence Interval ^b		0.926 to 0.969
z statistic		44.877
Significance level P (Area=0.5)		<0.0001



With PSG-ODI \geq 20 times/h as the positive standard for OSAHS diagnosis, the sensitivity of the Ring was 85% and the specificity was 94%.

The ROC curve method was used to evaluate the diagnostic accuracy of the Ring, and the area under the curve was 0.951 (P<0.001).

Variable	Ring	
Classification variable	Mark	
Sample size		442
Positive group :	Mark = 1	220
Negative group :	Mark = 0	222
Disease prevalence (%)		unknown
Area under the ROC curve (AUC)		0.950
Standard Error ^a		0.0108
95% Confidence Interval ^b		0.925 to 0.968
z statistic		41.818
Significance level P (Area=0.5)		<0.0001



With PSG-ODI \geq 30 times/h as the positive standard for OSAHS diagnosis, the sensitivity of the Ring was 79% and the specificity was 94%.

The ROC curve method was used to evaluate the diagnostic accuracy of the Ring, and the area under the curve was 0.950(P<0.001).

ODI statistical results

	Prevalence	Sensitivity	Exact 95% CI		Specificity	Exact 95% CI		PPV	NPV
			LB	UB		LB	UB		
Mega versus PSG									
ODI3, events/h									
≥5	0.79	0.92	0.89	0.95	0.84	0.75	0.91	0.96	0.75
≥10	0.70	0.90	0.86	0.93	0.87	0.80	0.82	0.94	0.79
≥15	0.63	0.89	0.85	0.93	0.90	0.84	0.94	0.94	0.83
≥30	0.50	0.79	0.73	0.84	0.94	0.89	0.96	0.93	0.81