

A Novel Point-of-care
Ultrasound Method to Assess
Diaphragmatic Excursion

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INTRO

- A new point-of-care ultrasound method to assess diaphragmatic function and rule in or rule out paresis of the diaphragm
- Measures excursion of the uppermost point of the zone of apposition (ZOA) at the mid-axillary line using a high-frequency linear ultrasound probe

METHODS

- Three ultrasound methods were compared: (Figures 1,2 and 3)
 - Assessment of the excursion of the DOD using a curvilinear probe through an abdominal window
 - Assessment of the Thickening Fraction of the ZOA
 - Assessment of the excursion of the ZOA.

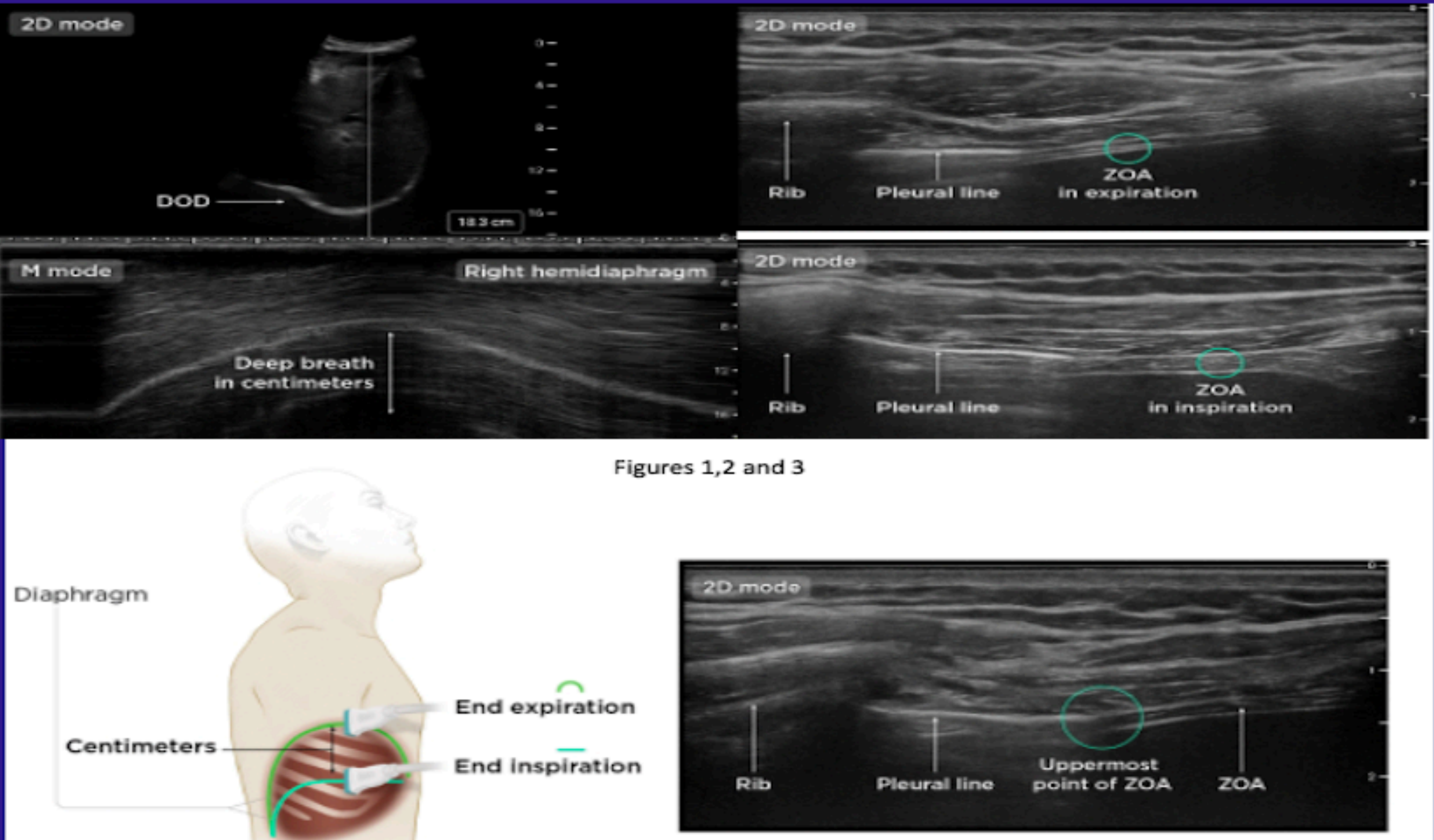
RESULTS

- N=75 volunteers**
 - Primary outcome measure: Success rate of the imaging method (Table 1)
- Excursion of ZOA was more consistently successful (100% bilaterally) than evaluation of excursion of DOD (98.7% on right, 34.7% on left)
- Secondary outcome measure: Procedure times and Correlations among measurements

There was significant correlation between the excursion measurements of the ZOA and the DOD on both sides (Spearman CC 0.28 on right side and 0.42 on the left side, p<0.05)

DISCUSSION:

- New method is simpler, more consistently successful particularly on the left hemithorax. Future studies needed to establish normal values and diagnostic criteria.



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	ZOA (n=75)	DOD (N=72 right, 26 left)	p Value
Success Right Side n (%)	75 (100%)	74 (98.7%)	1
Success Left Side n (%)	75 (100%)	26 (34.7%)	< 0.0001
Time to measure Right (min)	3.5 (2.9, 5.1)	1.9 (1.2, 2.8)	<0.001
Time to measure Left (min)	3.1 (2.4, 4.0)	2.9 (1.9, 4.0)	0.177

Table 1

