

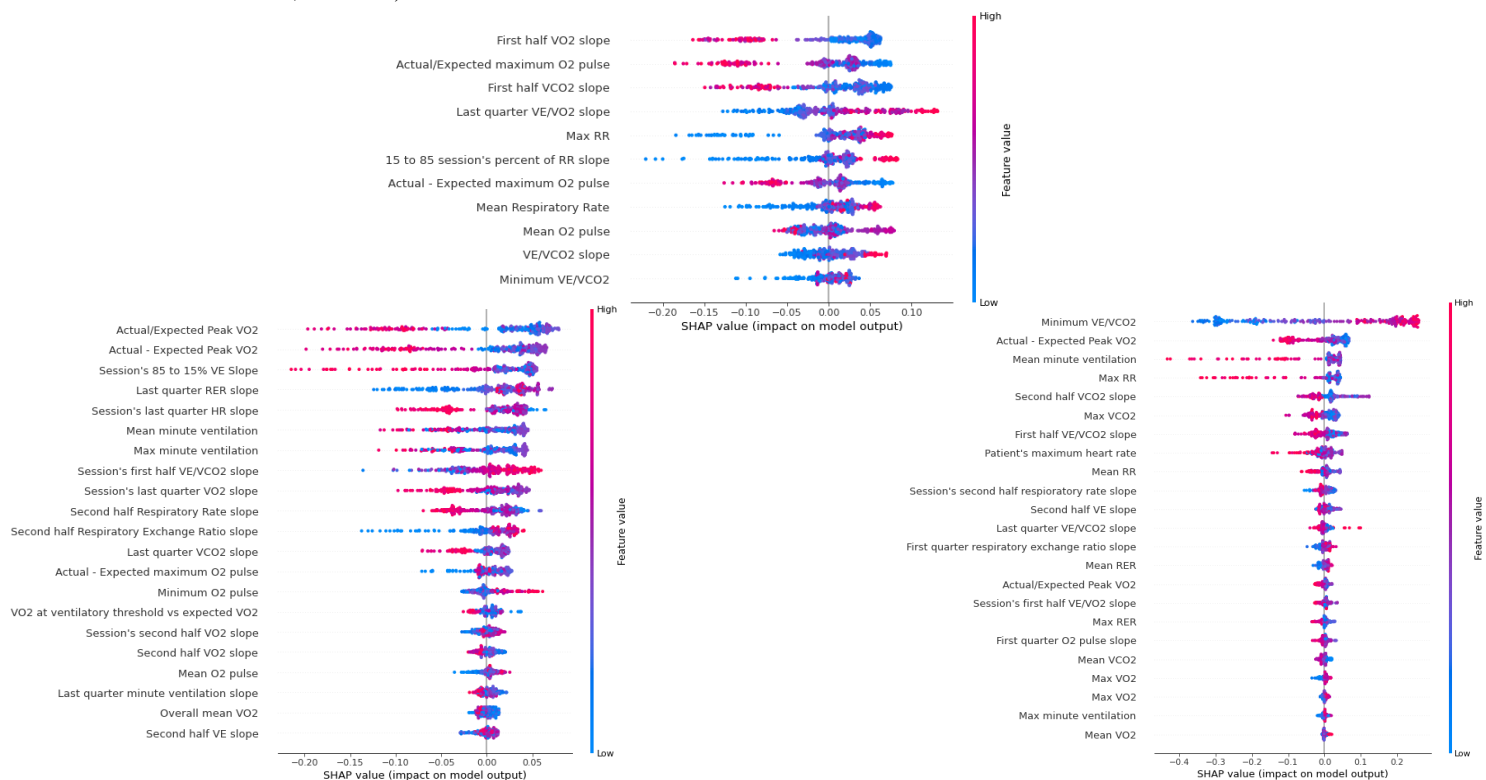
SUPPLEMENTARY TABLE I
CARDIOPULMONARY EXERCISE TEST CASE SUMMARY BY MEDICAL PROBLEM

Primary Cardiac	cases (n)	Primary Pulmonary	cases (n)	Primary Other	cases (n)	Healthy	cases(n)
Congestive heart failure (CHF)	35	Chronic obstructive pulmonary disease (COPD)	22	Peripheral arterial disease (PAD)	28	Healthy	54
Myocardial ischemia (MI)	10	Interstitial lung disease (ILD)	22	Pulmonary hypertension (PH)	24	Prediabetes (PD)	24
Abnormal heart rhythm (AHR)	9	Restricted lung mechanics	3	Metabolic myopathy (MM)	8	Metabolic syndrome	15
Congenital heart disease (CHD)	6	Asthma	2	Anemia	1	Obesity	7
Valvular heart disease (VHD)	4	-	-	Neuromuscular disease (NM)	1	-	-

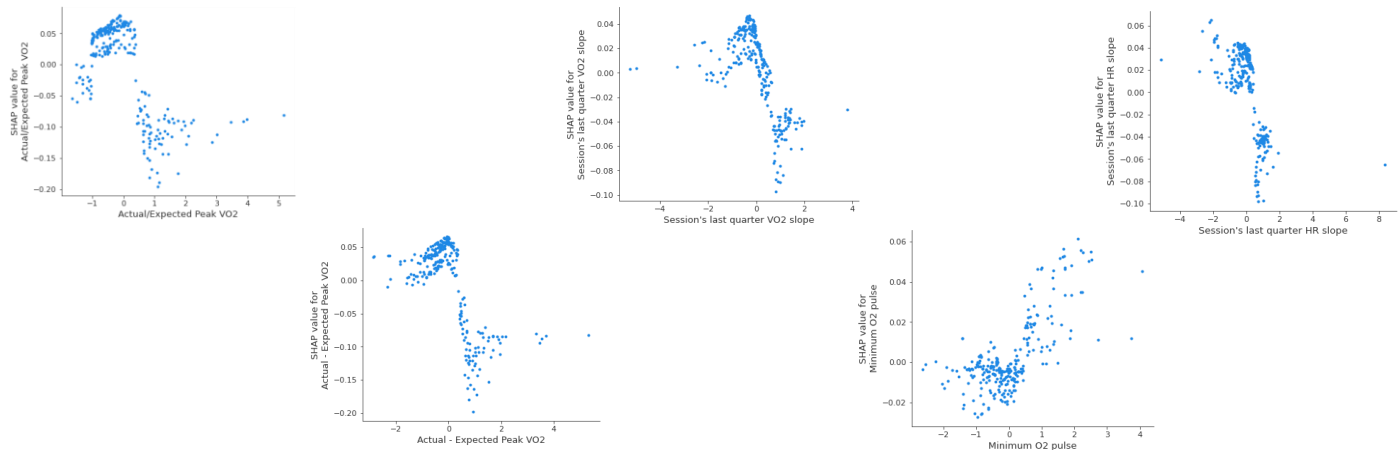
SUPPLEMENTARY TABLE II
MODELS AND SCALERS' DETAILS AND PERFORMANCE

Type		Cardiac	Pulmonary	Other
Scaler		Standard Scaler with mean and std	Standard Scaler with mean and std	Normalizer with L1 norm
Model		Random Forest	Random Forest	Random Forest
Metadata	Bootstrap	TRUE	TRUE	TRUE
	Criterion	Entropy	Entropy	Gini
	max features	Sqrt	0.1	None
	min sample leaf	0.01	0.01	0.01
	min sample split	0.01	0.01	0.02
	estimators	400	200	75
Performance	OOB Score	TRUE	TRUE	TRUE
	Final AUC	0.978	0.934	0.901
	Final Sensitivity	0.846	0.875	0.636
	Final Specificity	0.968	0.861	0.848
	Final PPV	0.917	0.583	0.583
	Final Accuracy	0.932	0.864	0.795

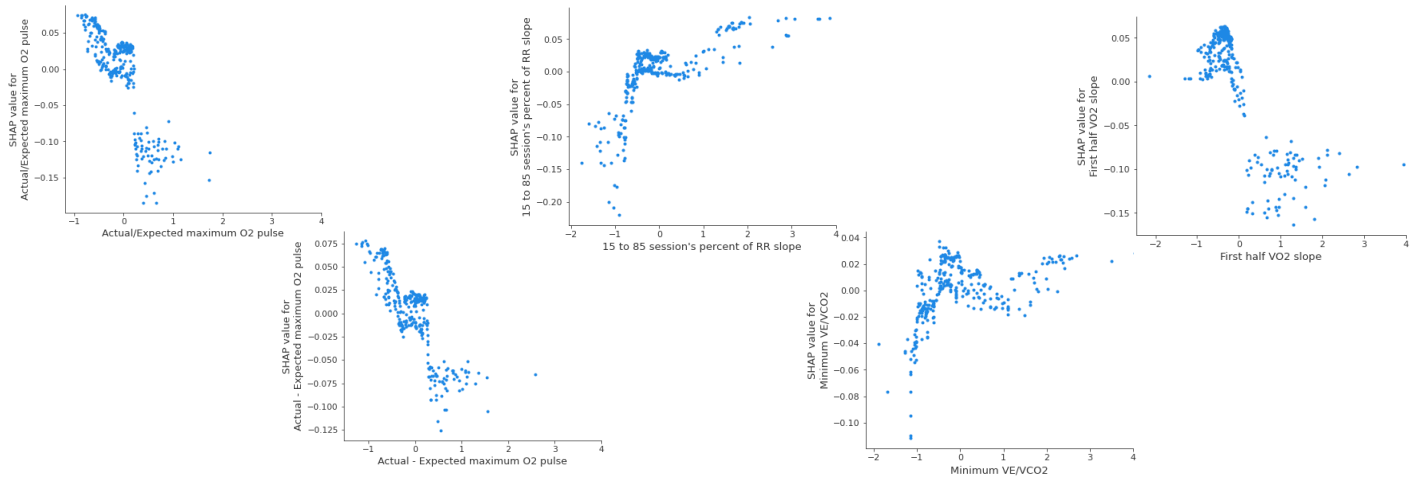
SUPPLEMENTARY FIGURE 1. COMPLETE SHAP SUMMARY PLOTS (FROM LEFT TO RIGHT: CARDIAC, PULMONARY, OTHER)



SUPPLEMENTARY FIGURE 2. TOP FIVE FEATURES DEPENDENCY PLOTS ON CARDIAC LIMITATION



SUPPLEMENTARY FIGURE 3. TOP FIVE FEATURES DEPENDENCY PLOTS ON PULMONARY LIMITATION



SUPPLEMENTARY FIGURE 4. TOP FIVE FEATURES DEPENDENCY PLOTS ON OTHER LIMITATION

