

TECHNEGAS Ventilation/Perfusion SPECT imaging protocol Example #1

<i>VENTILATION</i>		<i>Comments</i>
Dose of Perchnetate	555Mbq	Goes between 555 and 740MBq (highest doses for pre calibration)
Average Count rate	1kcps	Ideally 1.5-2kcps
Camera Model/Vendor	SMV	
Collimators	LEHR	
Single or dual head acquisition	Dual	
Number of views (or degrees per step)	64 (32 steps)	
Time per step	28sec	
Reconstruction method (iterative or FBP)	OSEM (iterative)	
Filter (frequency/cut off)	Fr; 0,35 Cut off: 6	Butterworth

<i>PERFUSION</i>		<i>Comments</i>
Dose of MAA	259Mbq	Up to 333MBq with fresh MAA and high T' gas count rate.
Average Count rate	4-8kcps	Quite variable, depending on MAA IV technique and dose. Minimum required: ratio P/V of 4 and up.
Camera Model/Vendor	SMV	
Collimators	LEHR	
Single or dual head acquisition	Dual	
Number of views (or degrees per step)	64 (32 steps)	
Time per step	17sec	
Reconstruction method (iterative or FBP)	OSEM (iterative)	
Filter (frequency/cut off)	Fr: 0,35 Cut off: 6	Butterworth

The above is an example of a protocol currently used in the field and does not necessarily reflect recommendations made by Cyclomedica or the camera Vendor stated.

TECHNEGAS Ventilation/Perfusion SPECT imaging protocol Example #2

<i>VENTILATION</i>		<i>Comments</i>
Dose of Pertechnetate	~40 Mbq	
Average Count rate	~0.7 kcps	
Camera Model/Vendor	Siemens Ecam or Symbia T	
Collimators	LEHR	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	64 views	This is the total number of views. Or 32 views/head
Time per step	20 sec	
Reconstruction method (iterative or FBP)	Flash3D	8 iteration with 8 subsets
Filter (frequency/cut off)	10 mm Gaussian	

<i>PERFUSION</i>		<i>Comments</i>
Dose of MAA	~ 200 Mbq	We usually aim for 4-5 times the ventilation activity
Average Count rate	~2.5 kcps	
Camera Model/Vendor	Siemens Ecam or Symbia T	
Collimators	LEHR	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	64 views	This is the total number of views. Or 32 views/head
Time per step	10 sec	
Reconstruction method (iterative or FBP)	Flash3D	8 iteration with 8 subsets
Filter (frequency/cut off)	10 mm Gaussian	

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TECHNEGAS Ventilation/Perfusion SPECT imaging protocol Example #3

VENTILATION		Comments
Dose of Perchnetate	400 Mbq	
Average Count rate	2 k cps	
Camera Model/Vendor	Philips Forte, Vertex or Siemens Symbia T	
Collimators	VXGP, LEHR	
Single or dual head acquisition	Dual	
Number of views (or degrees per step)	72 (36 per head)	
Time per step	20 sec	
Reconstruction method (iterative or FBP)	Iterative	
Filter (frequency/cut off)	OSEM	

PERFUSION		Comments
Dose of MAA	200 Mbq	
Average Count rate	7000 kcps	
Camera Model/Vendor	Philips Forte or Vertex, or Symbia T	
Collimators	VXGP, LEHR	
Single or dual head acquisition	Dual	
Number of views (or degrees per step)	72 (36 per head)	
Time per step	10 sec	
Reconstruction method (iterative or FBP)	Iterative	
Filter (frequency/cut off)	OSEM	

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TECHNEGAS Ventilation/Perfusion SPECT imaging protocol Example #4

<i>VENTIALATION</i>		<i>Comments</i>
Dose of Pertechnetate	560 Mbq	Between 400 and 700 MBq
Average Count rate	1.2 kcps	
Camera Model/Vendor	Axis	By Marconi (Phillips)
Collimators	LEHR	
Single or dual head acquisition	Dual	
Number of views (or degrees per step)	36 (72)	
Time per step	20 sec	
Reconstruction method (iterative or FBP)	FBP	
Filter (frequency/cut off)	Low Pass	Order: 8.0 Cut off: 0.42

<i>PERFUSION</i>		<i>Comments</i>
Dose of MAA	185 Mbq	Up to 296 MBq (if I have 2 kcps at ventilation)
Average Count rate	8 kcps	Minimum of 4.4 until 12 kcps
Camera Model/Vendor	Axis	
Collimators	LEHR	
Single or dual head acquisition	Dual	
Number of views (or degrees per step)	36 (72)	
Time per step	10 sec	Between 10-20 sec. The camera decided
Reconstruction method (iterative or FBP)	FBP	
Filter (frequency/cut off)	Low Pass	Order: 5.1 Cut off: 0.46

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TECHNEGAS Ventilation/Perfusion SPECT imaging protocol Example #5

<i>VENTIATION</i>		<i>Comments</i>
Dose of Perchnetate	37Mbq	
Average Count rate	1.0kcps	
Camera Model/Vendor	Siemens	
Collimators	Lehr	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	32views/head	Continuous mode
Time per step	28 sec	
Reconstruction method (iterative or FBP)	FBP,Butterworth .60 , 3.0	Sometime iterative-iterative6,subset4
Filter (frequency/cut off)		

<i>PERFUSION</i>		<i>Comments</i>
Dose of MAA	296Mbq	
Average Count rate	kcps	4time kcps ventilation
Camera Model/Vendor	Siemens	
Collimators	LEHR	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	32 views/head	Continuous mode
Time per step	17 sec	
Reconstruction method (iterative or FBP)	FBP Butterworth .60 , 3.0	Sometime iterative-6 itération,subset4
Filter (frequency/cut off)		

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TECHNEGAS Ventilation/Perfusion SPECT imaging protocol Example #6

<i>VENTIATION</i>		<i>Comments</i>
Dose of Perchnetate	370 Mbq 100 mCi/ml	Usually 2 inhalations
Average Count rate	3 kcps	
Camera Model/Vendor	GE Infinia	
Collimators	LEGP	
Single or dual head acquisition	Dual	
Number of views (or degrees per step)	60 steps	1.33 zoom
Time per step	30 sec	
Reconstruction method (iterative or FBP)	iterative	OSEM
Filter (frequency/cut off)	Pre Post	BW 0.5/10 BW 0.4/15

<i>PERFUSION</i>		<i>Comments</i>
Dose of MAA	222 Mbq	
Average Count rate	18 kcps	Must be 4:1 ratio perf: vent count rate
Camera Model/Vendor	GE Infinia	
Collimators	LEGP	
Single or dual head acquisition	Dual head	
Number of views (or degrees per step)	60 steps	
Time per step	15 sec	
Reconstruction method (iterative or FBP)	Iterative	OSEM
Filter (frequency/cut off)	Same as Vent	Use dual lung SPECT processing sw

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**TECHNEGAS Ventilation/Perfusion SPECT imaging protocol
Example #7**

<i>VENTIATION</i>		<i>Comments</i>
Dose of Perchnetate	~11-15 Mbq	
Average Count rate	1.2-1.5 kcps	
Camera Model/Vendor	G.E. Infinia	
Collimators	LEHR	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	6 degrees per step	180 degrees per head (60 views total)
Time per step	20 sec	
Reconstruction method (iterative or FBP)	Iterative	
Filter (frequency/cut off)	Butterworth 0.5 10	

<i>PERFUSION</i>		<i>Comments</i>
Dose of MAA	~5 Mbq	
Average Count rate	At least double vent kcps	
Camera Model/Vendor	G.E. Infinia	
Collimators	LEHR	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	same	
Time per step	20 sec	
Reconstruction method (iterative or FBP)	same	
Filter (frequency/cut off)	same	

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TECHNEGAS Ventilation/Perfusion SPECT imaging protocol Example #8

<i>VENTILATION</i>		<i>Comments</i>
Dose of Perchnetate	400-650 Mbq	In 0,15 ml in oven; estimated 30-50 MBq in lungs
Average Count rate	1-1,5 kcps	
Camera Model/Vendor	Adac forte	
Collimators	High resolution	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	72 views	
Time per step	20 sec	
Reconstruction method (iterative or FBP)	iterative	
Filter (frequency/cut off)	Butterworth order 10 cutoff 0,4	2 iterations 8-12 subsets

<i>PERFUSION</i>		<i>Comments</i>
Dose of MAA	185-325 MBq	Adjusted for ventilation count rate and patient weight
Average Count rate	5-12 kcps	
Camera Model/Vendor	Adac forte	
Collimators	High resolution	
Single or dual head acquisition	dual	
Number of views (or degrees per step)	72 views	
Time per step	10 sec	
Reconstruction method (iterative or FBP)	iterative	
Filter (frequency/cut off)	Butterworth order 10 cutoff 0,4	2 iterations 8-12 subsets

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