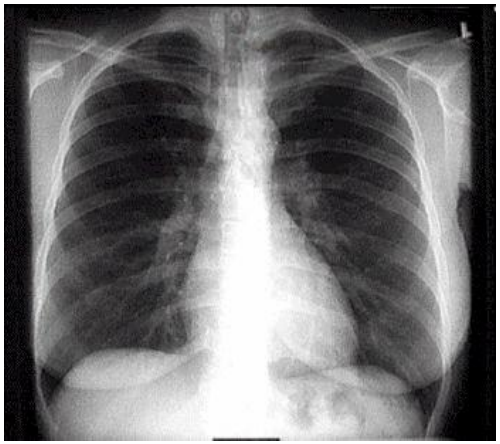
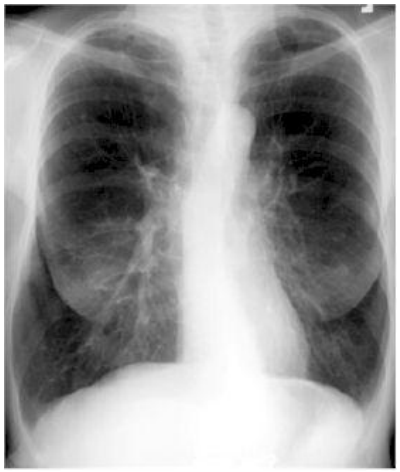
Finn Rasmussen

COPD why do they have dyspnoea??

- Increased energy spending for breathing
- Hyperinflation

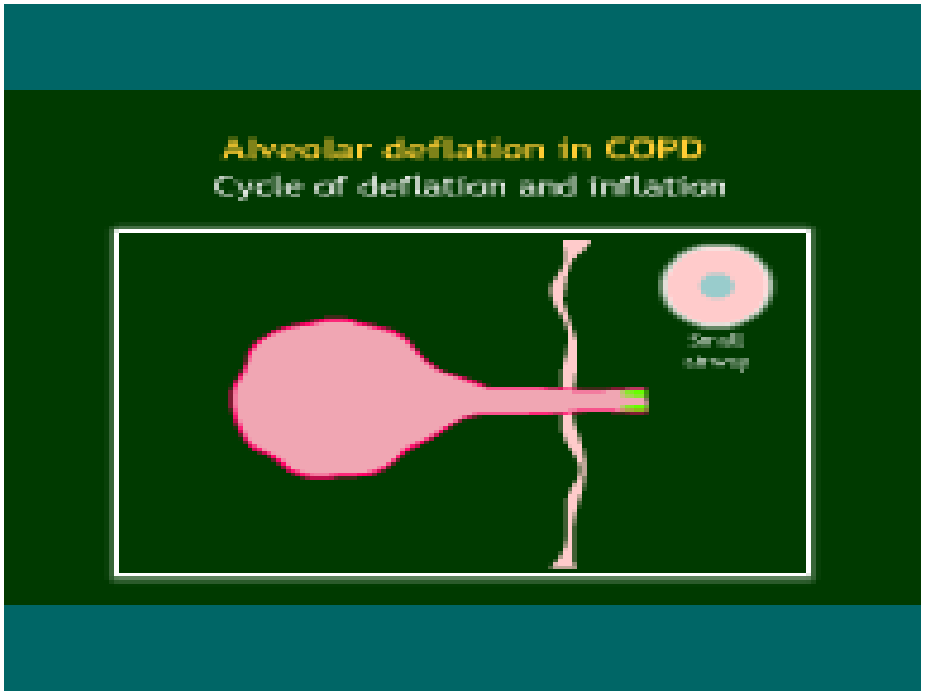
Normal

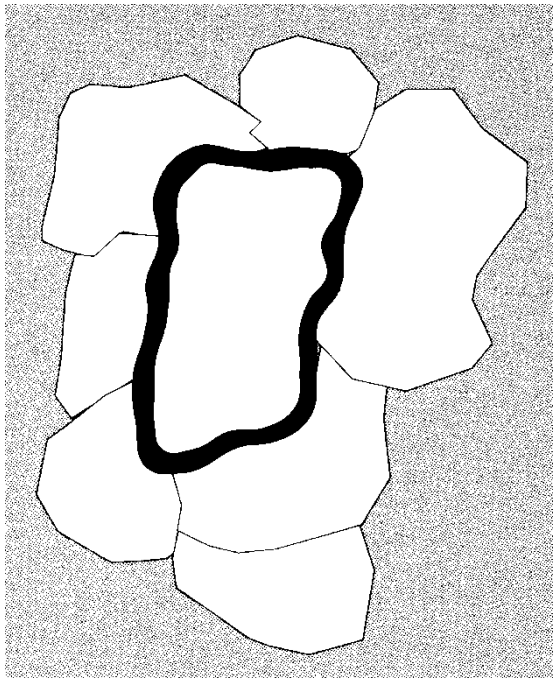




COPD

KOL





COPD, loss of elasticity and increased inflammation
All adding to increased stiffness and decreased sized bronchi's

COPD
What can and do we want to achive

- The patient to fell better – mainly symptoms.
- COPD should be treated according to severness
- Always address SMOKING on every visit !!
- Inhaler teknik should be tested frequently
- Give influenza vaccine

Diagnosis !

Spirometry !

Figure 1-2. Spirometric Classification of COPD Severity Based on Post-Bronchodilator FEV_1

Stage I: Mild	$FEV_1/FVC < 0.70$ $FEV_1 \geq 80\%$ predicted
Stage II: Moderate	$FEV_1/FVC < 0.70$ $50\% \leq FEV_1 < 80\%$ predicted
Stage III: Severe	$FEV_1/FVC < 0.70$ $30\% \leq FEV_1 < 50\%$ predicted
Stage IV: Very Severe	$FEV_1/FVC < 0.70$ $FEV_1 < 30\%$ predicted or $FEV_1 < 50\%$ predicted plus chronic respiratory failure

FEV_1: forced expiratory volume in one second; FVC: forced vital capacity; respiratory failure: arterial partial pressure of oxygen (PaO_2) less than 8.0 kPa (60 mm Hg) with or without arterial partial pressure of CO_2 ($PaCO_2$) greater than 6.7 kPa (50 mm Hg) while breathing air at sea level.

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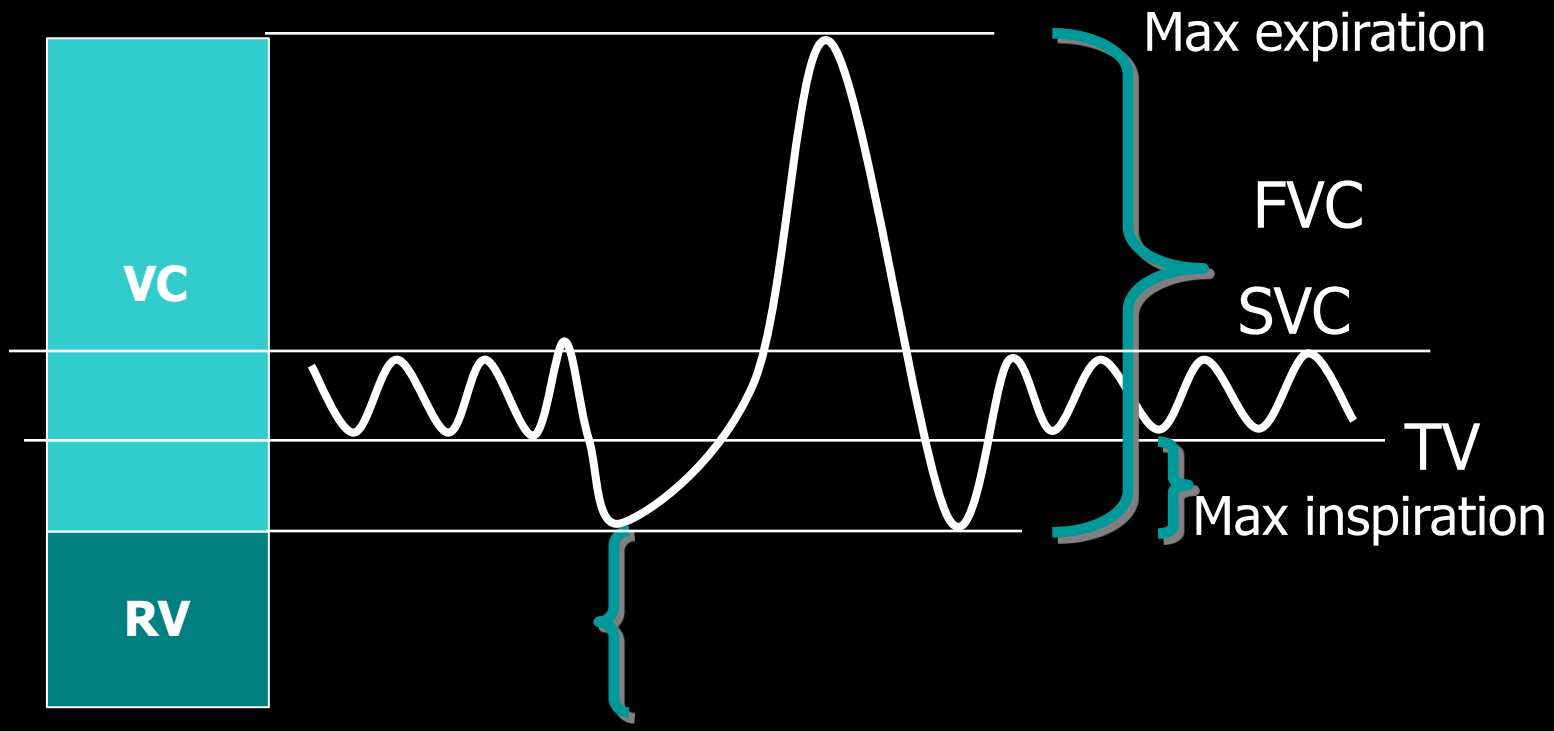
Spirometri

Why Spirometry is important .

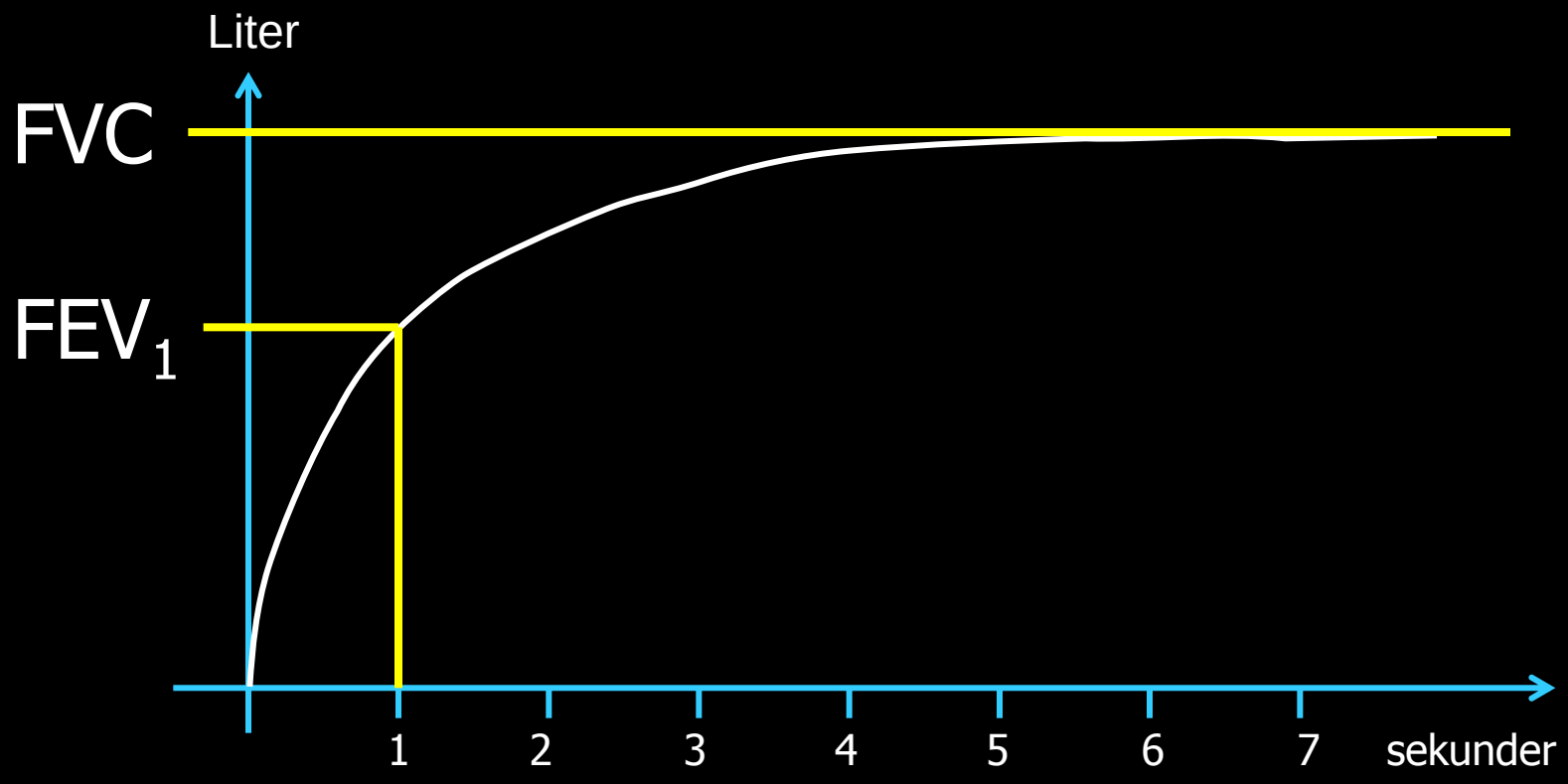
- Need it to diagnose COPD
- Can diagnose most diseases in the lung
- Differentiate between asthma and COPD
  - Treatment and prognose is different
- Stage of COPD is important as the treatment is according to that !!
- Motivation for smoking cessation
- Motivation for exercise

Volumina

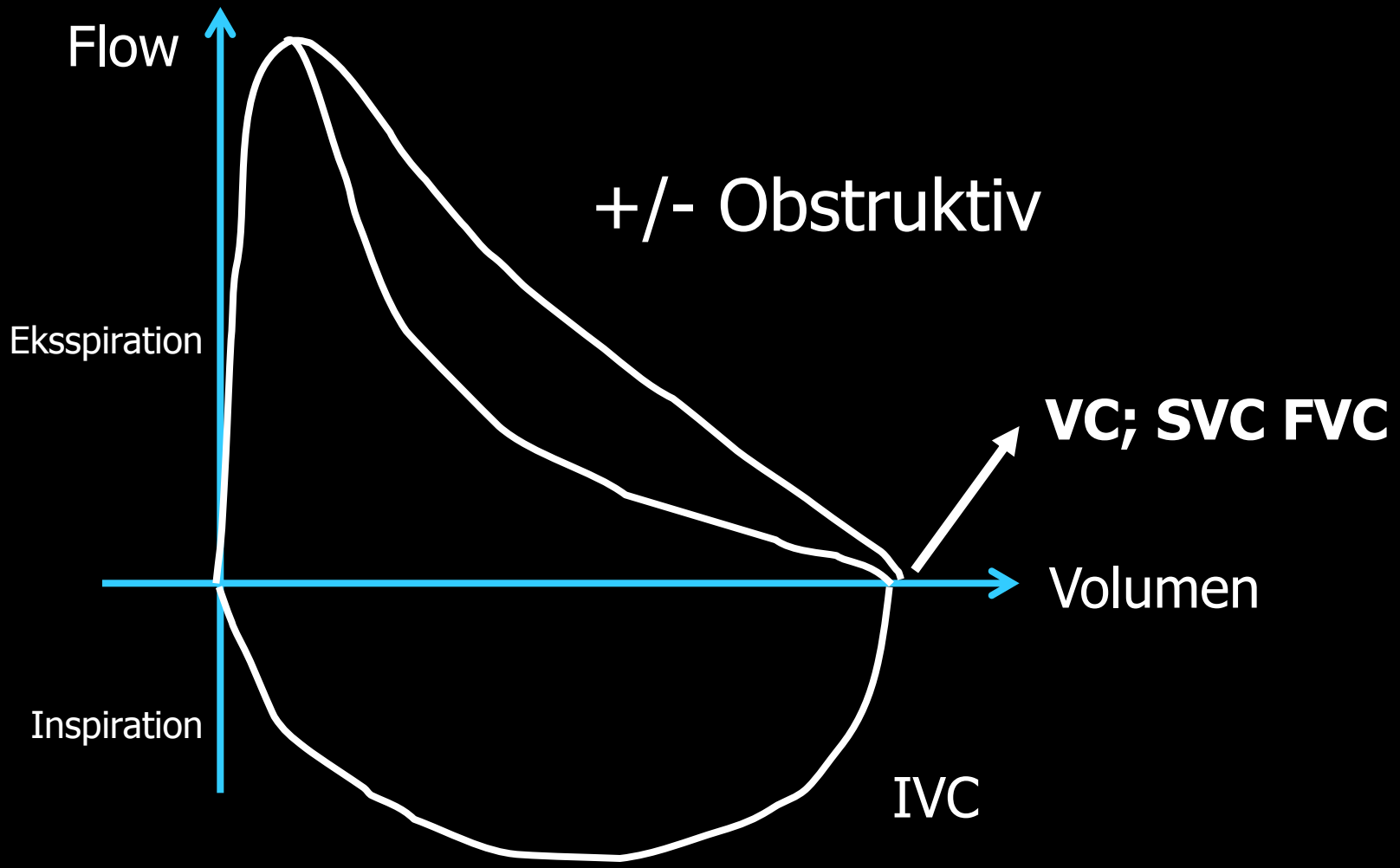


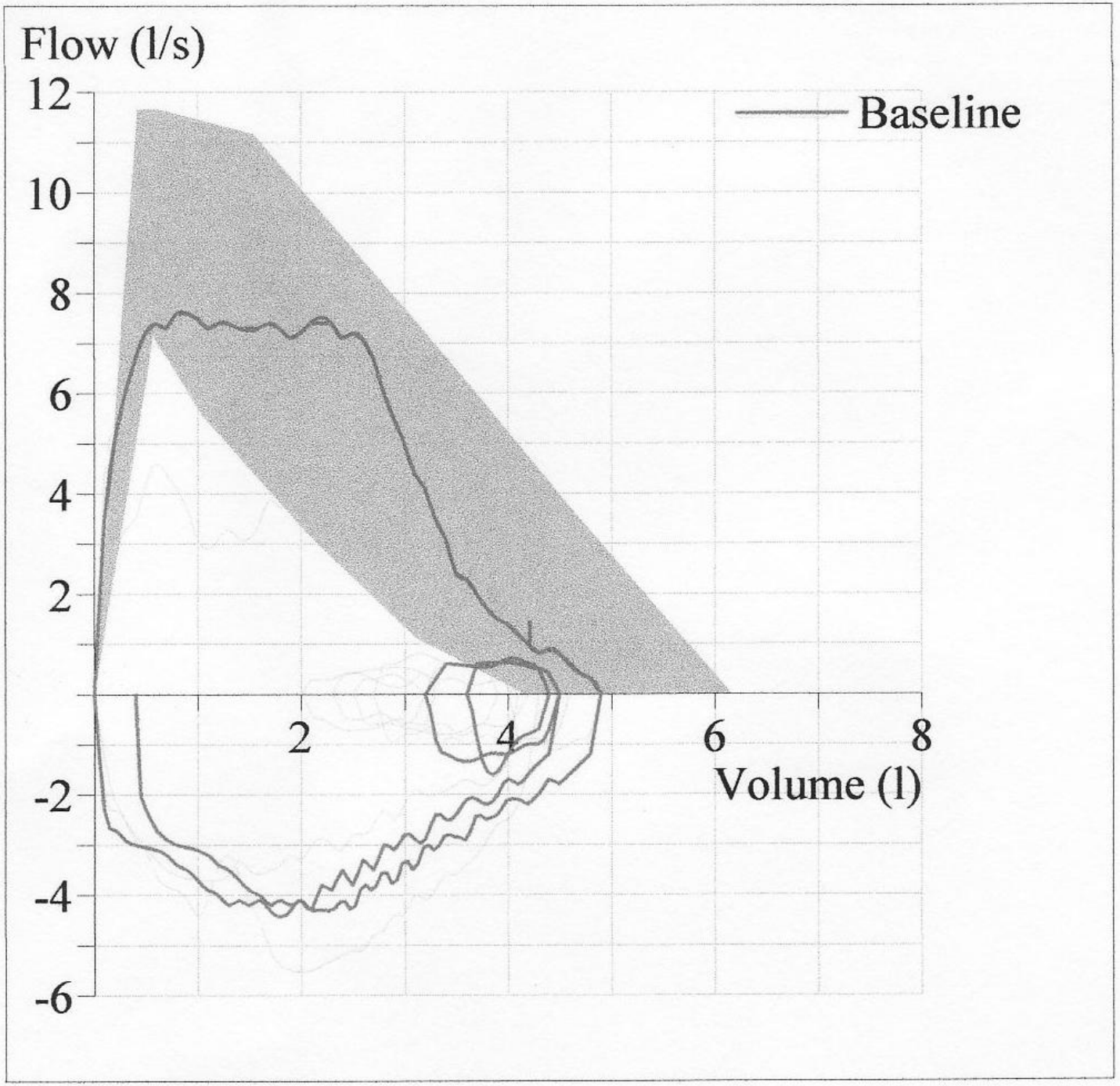
Normal In normal spirometry TLC and DLCO is not measured

volume curve



Flow-volume curve




Flow (l/s)
12
10
8
6
4
2
-2
-4
-6
Baseline
2
4
6
8
Volume (l)

Spida 5 - C:\PROGRAMMER\MICRO MEDICAL\SPIDA5\PATIENTDATABASE OUH.MDB

File View Data Setup Window Help

Upload | Search | New Examination | VC | Forced Post 2 | Relaxed Post 2 | Exit Spida 5

Patient Data

Surname	First Name	ID
Andersen	Else Alvilda	260431-0736
Andersen	Knud Erik	140461-2383
Andersen	Anne B.	130384-1462
Andersson	Villy Millner	081134-1355
Andreasen	Doris	020140-1542
Andreasen	Henning	261034-1589
Andreasen	Kurt A. H.	110238-1935

Base			Post 1			
Date/Time	:...	R.	Date/Time	:...	R.	Date/Time
29-01-2008 11:...	5	0		0	0	
10-04-2008 10:...	4	0	10-04-2008 10:45:37	4	0	

T...	Type	FEV1	FVC	PEF	Quality
1	Base	2.57	3.37	277	Good Blow
2	Base	2.45	3.36	299	Poor Effort
3	Base	2.34	3.63	401	Good Blow

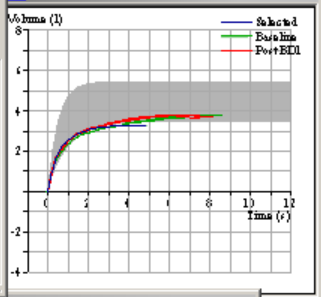
T...	Type	EVC	IVC

Examination Notes

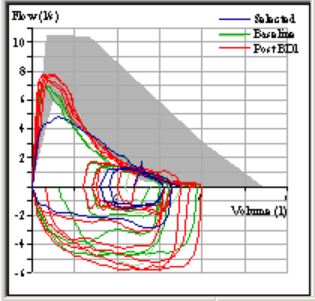
Relaxed Results

Index	Actual	P...	%Pred

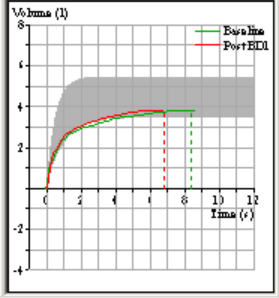
All VTG



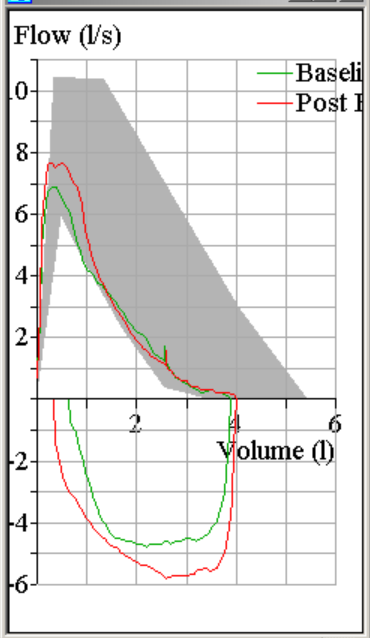
All FVL



Best VTG



Best FVL

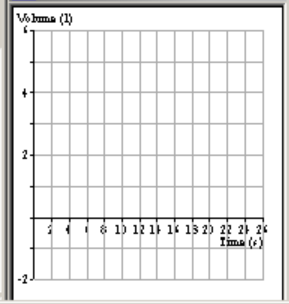


Forced Results

Good Blow Variance -7%

Index	Actual	Pred	%Pred	Best	%Best	Base	%Chg	Post 1	%Chg1
VC									
FEV1	2.57	3.39	76	2.57	100	2.57	0	2.58	-0
FVC	3.37	4.44	76	3.84	88	3.84	-12	3.88	-13
FEV1/VC									
FEV1/FVC	76	75		67	114	67	14	66	15
FET	4.91			8.36	59	8.36	-41	6.84	-28

Best Tidal VC



Child Incentive

For Help, press F1

Start | Novell-delivered Applicati... | Spida 5 - C:\PROGRA... | Microsoft Office Professi... | Dokument 1 - Microsoft ... | 79% | 15:32

Again purely a spirometry diagnosis

Figure 1-2. Spirometric Classification of COPD Severity Based on Post-Bronchodilator FEV_1

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Diagnosis!

- Always reversibility test
  - Lav LFU
  - beta2-agonist (short akting)
    - spacer 0.6mg salbutamol
  - Wait ……15-30 min
  - New lung function test
  - (no international recommandations on dose for the test)

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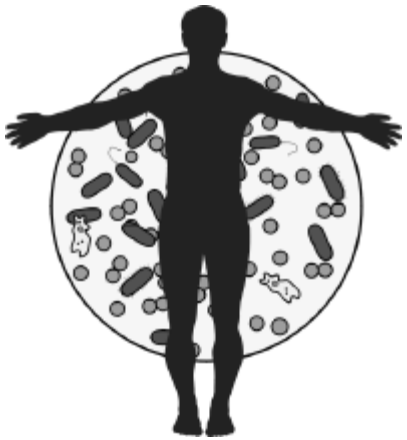
Treatment

- Non farmakologisk
  - Smoking stop
    - Counceling
    - Medicine
  - Pulmonal rehabilitation
- Farmakological



FIND SMOKERS !?

- Make them to stop !?

Why smoking stop

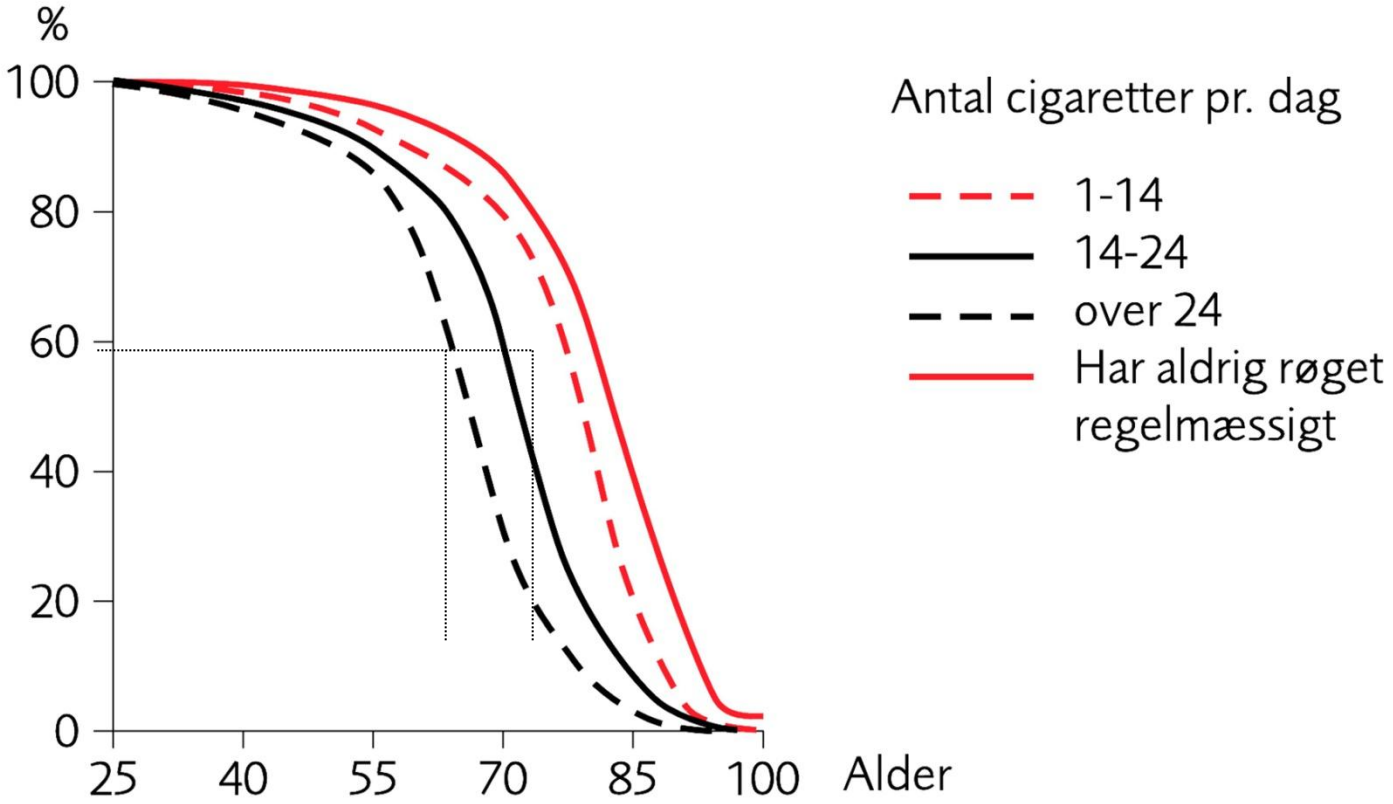
Increased survival and better !!!

Risk for exacerbations decreases

Yearly fall in lung function is less (1/3 better than a smoker)

And cough. Plegm and so on gets better ……

Number of cigaretts and average living expectance



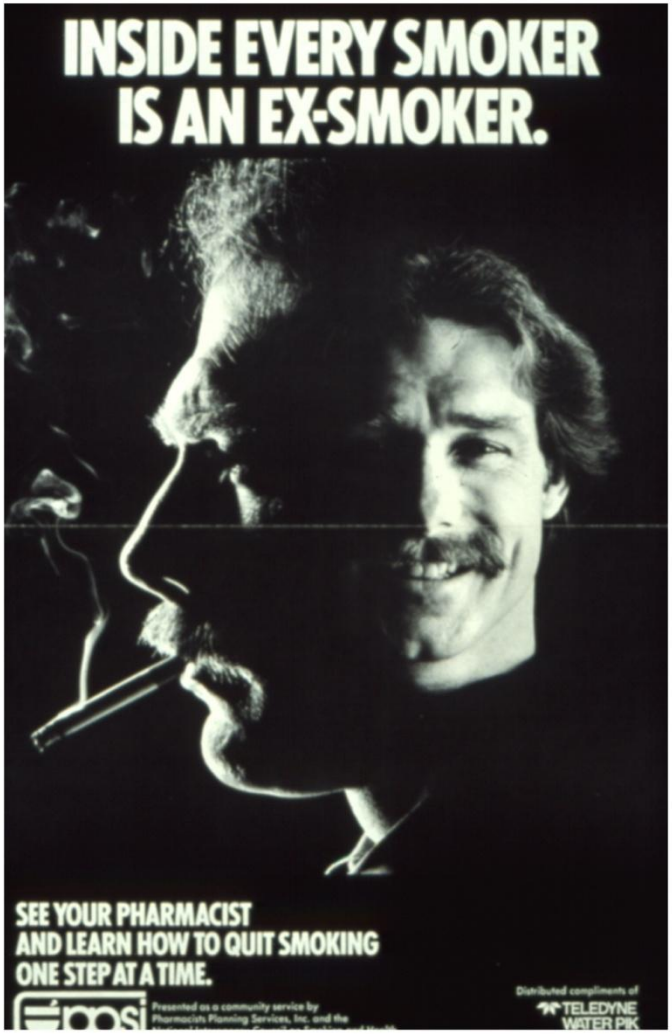
If you smoke more than 25 cigarettes a day , you have 50 % chance to reach 70 years

Non smokers has 80 % chance.

"Doctors study", Doll, Peto et al., BMJ., 1994.

Smoking cessation
What works ?

- Counselling and medicine works both alone !?
- However work best combined ?!



Meta-analyses in the 2008

American Journal of Preventive Medicine, Volume 35, Number 2 www.ajpm

Treatments medically ?

-choose one of these ?

- – Bupropion SR
- – Nicotine gum
- – Nicotine inhaler
- – Nicotine nasal spray
- – Nicotine patch
- – Varenicline

Table 7. Effectiveness and abstinence rates of medications relative to the nicotine patch (n=86 studies)

Medication	Number of arms*	Estimated odds ratio (95% CI)
Nicotine patch (reference group)	32	1.0
Monotherapies		
Varenicline (2 mg/day)	5	1.6 (1.3, 2.0)
Nicotine nasal spray	4	1.2 (0.9, 1.6)
High dose nicotine patch (>25 mg; standard or long-term)	4	1.2 (0.9, 1.6)
Long-term nicotine gum (>14 weeks)	6	1.2 (0.8, 1.7)
Varenicline (1 mg/day)	3	1.1 (0.8, 1.6)
Nicotine Inhaler	6	1.1 (0.8, 1.5)
Clonidine	3	1.1 (0.6, 2.0)
Bupropion SR	26	1.0 (0.9, 1.2)
Long-term nicotine patch (>14 weeks)	10	1.0 (0.9, 1.2)
Nortriptyline	5	0.9 (0.6, 1.4)
Nicotine Gum	15	0.8 (0.6, 1.0)
Combination therapies		
Patch (long-term; >14 weeks) + NRT (gum or spray)	3	1.9 (1.3, 2.7)
Patch + bupropion SR	3	1.3 (1.0, 1.8)
Patch + nortriptyline	2	0.9 (0.6, 1.4)
Patch + inhaler	2	1.1 (0.7, 1.9)
Second-generation antidepressants & Patch	3	1.0 (0.6, 1.7)
Medications not shown to be effective		
Selective serotonin reuptake inhibitors (SSRIs)	3	0.5 (0.4, 0.7)
Naltrexone	2	0.3 (0.1, 0.6)

*The term "arms" refers to the separate treatment or control groups comprised by the analyzed studies.
NRT, nicotine replacement therapy

A Clinical Practice Guideline for Treating Tobacco Use and Dependence: 2008 Update

A U.S. Public Health Service Report

The Clinical Practice Guideline Treating Tobacco Use and Dependence 2008 Update Panel, Liaisons, and Staff*

- Works !

Figure 5.3-10. Benefits of Pulmonary Rehabilitation in COPD

- Improves exercise capacity (**Evidence A**).
- Reduces the perceived intensity of breathlessness (**Evidence A**).
- Improves health-related quality of life (**Evidence A**).
- Reduces the number of hospitalizations and days in the hospital (**Evidence A**).
- Reduces anxiety and depression associated with COPD (**Evidence A**).
- Strength and endurance training of the upper limbs improves arm function (**Evidence B**).
- Benefits extend well beyond the immediate period of training (**Evidence B**).
- Improves survival (**Evidence B**).
- Respiratory muscle training is beneficial, especially when combined with general exercise training (**Evidence C**).
- Psychosocial intervention is helpful (**Evidence C**).

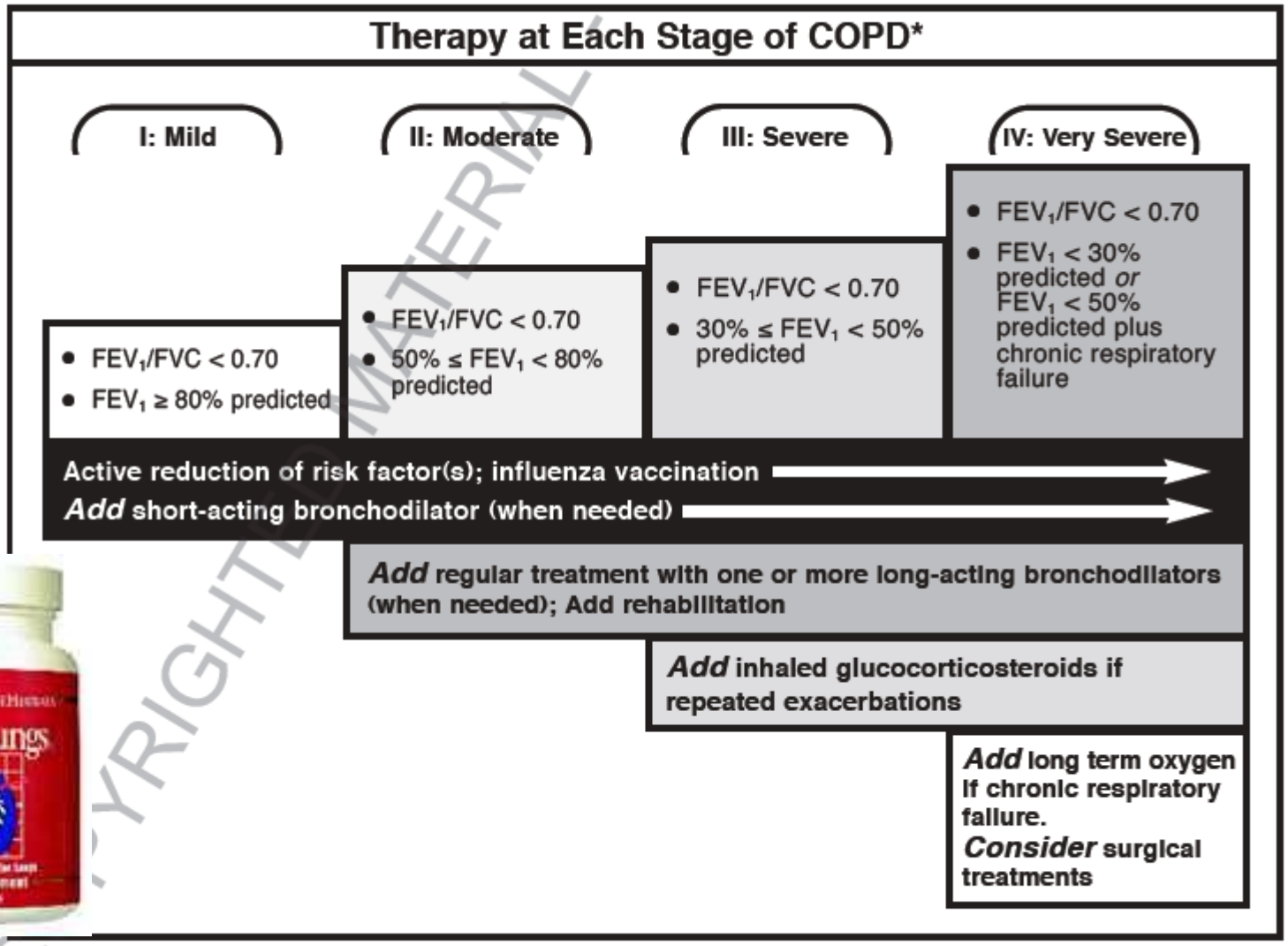
*helst post-bronkodilatatorisk

Think Efficient

Vaccination

- Yes !
  - Influenza vaccination
    - (pneumokok) ?

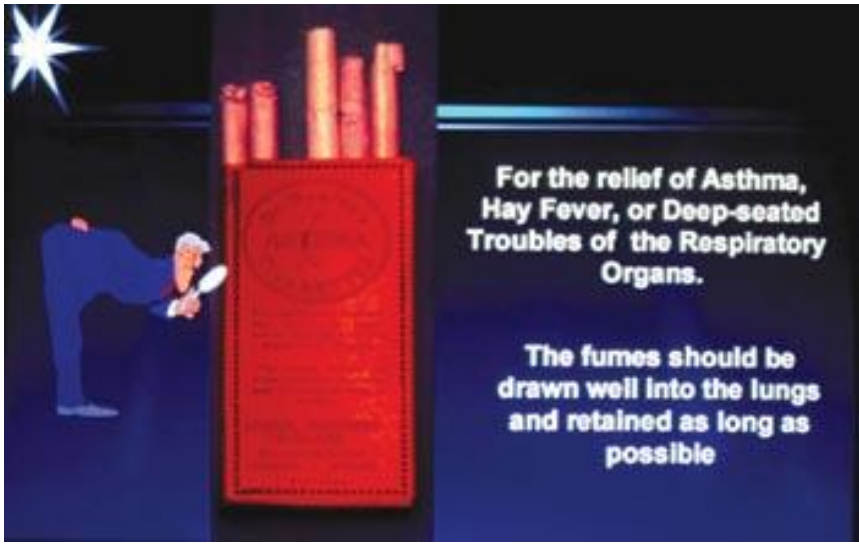
Treatment



*Postbronchodilator FEV_1 is recommended for the diagnosis and assessment of severity of COPD.

Tabletter

- ~~Bricanyl~~
- ~~Teofylamin~~
- ~~Montelukast~~
- Do not normaly use these in ”pure” COPD



Osteoporose

- Remember to check
  - Sufficient indtag af kalk og D-vitamin (1.000 mg og 800 IE).
  - Dexa skanning !?

Oxygen-terapy

- I hvile og stabil fase
  - If SAT≥93% (no extra test nessesary)
  - If <92 -> a-gas
  - Can be Oxygen after pneumona
    - New evaluation after 3mounth

Long-term oxygen therapy is generally introduced in *Stage IV: Very Severe COPD* for patients who have:

- PaO_2 at or below 7.3 kPa (55 mm Hg) or SaO_2 at or below 88%, with or without hypercapnia (**Evidence B**); *or*

- PaO_2 between 7.3 kPa (55 mm Hg) and 8.0 kPa (60 mm Hg), or SaO2 of 88%, if there is evidence of pulmonary hypertension, peripheral edema suggesting congestive cardiac failure, or polycythemia (hematocrit > 55%) (**Evidence D**).

"You're going to have to cut down on the pork if you want to keep huffing and puffing."

However

Non Invasive mekanical Ventilation

Forskelligt NIV-udstyr