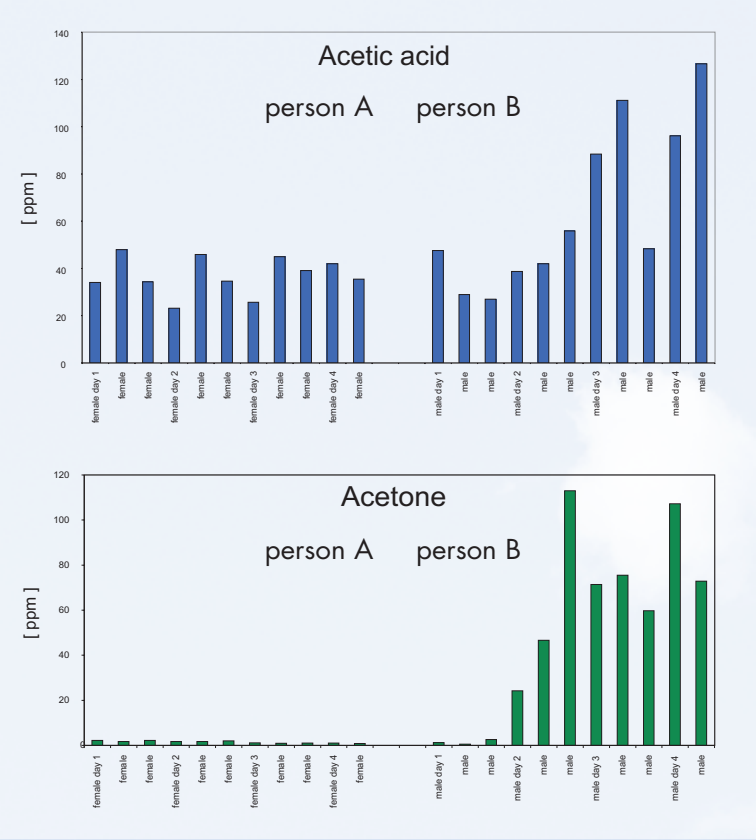
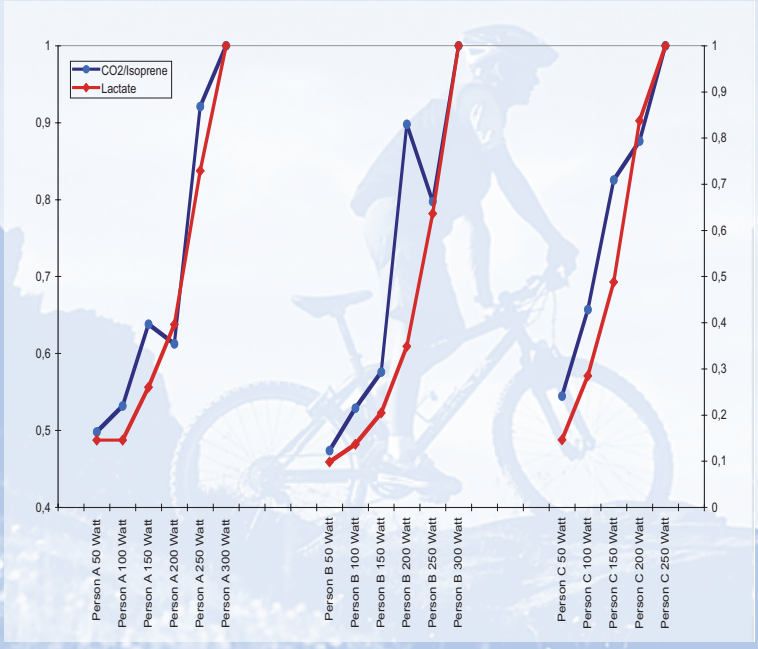
Monitoring of a detoxification-diet according to Dr. F.X. Mayr

• The inexpensive and rapid day by day monitoring of exhaled breath of dieting persons allows the close tracking of detoxification and indicates dangerous metabolism disfunction resulting in organ damages.

• Person A experiences positive effects of dieting whereas person B develops heavy ketoacidosis exhaling up to 120 ppm acetone (0,7 ppm in healty conditions) and develops an instant diabetes and liver disfuction.



Blood - lactate in correlation to off-line exhaled breath monitoring under bicycle ergometry



• All training institutes are in search of a fast, non invasive method to overcome tedious blood extraction and lactate analysis.

• The method of molecular breath analysis is an alternative
of tracking lactate buildup during training sequences.

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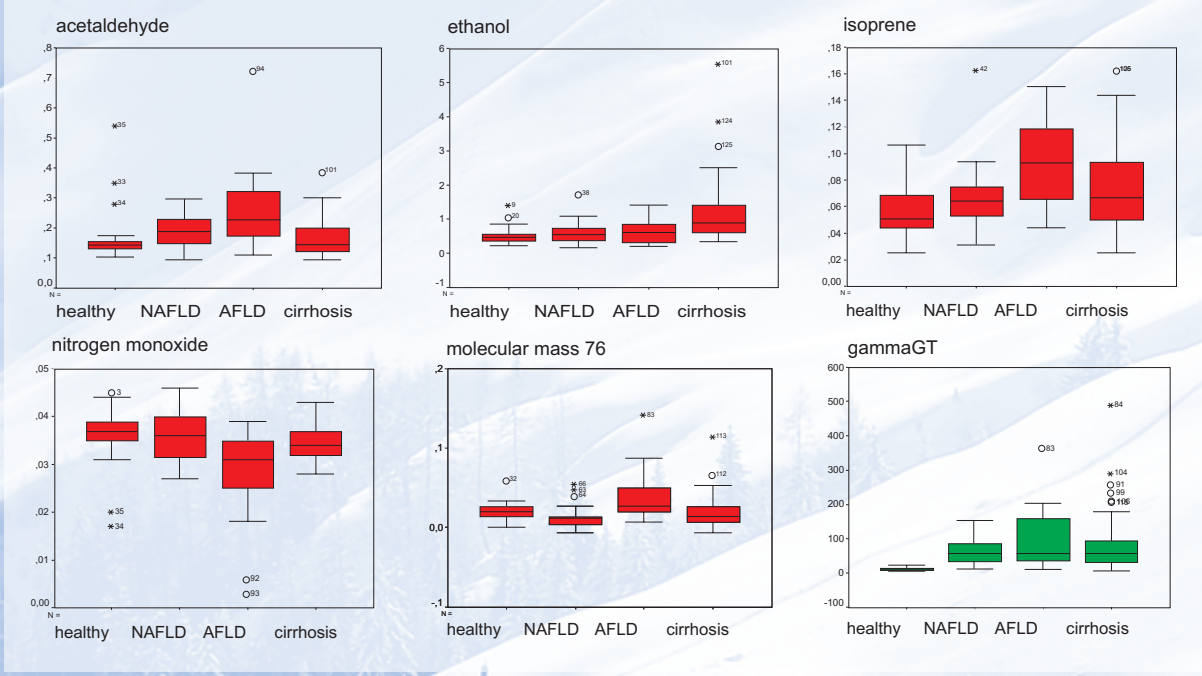
Breath analysis for liver diagnostics

- The concentrations of 44 low molecular weight compounds show statistically significant differences in exhaled breath of healythy, NAFLD (non alcoholic fatty liver disease), AFLD (alcoholic fatty liver disease) and cirrhotic people.

- In contrast to routine liver tests which mainly indicate a priciple liver disfunction, breath analytical data allow a much higher differentiation between liver diseases.



Lactose/Fructose intolerance and malabsorption monitoring

- Lactose and fructose intolerance or malabsorption are frequent disorders in civilized countries. In the USA more than 40 million people suffer from one or both of these disorders. In Europe the incidence is suspected to be between 15 and 20 percent.

- Breath analysis is performed in 30 minutes intervals before and after provocation of the gastrointestinal tract by 50 g lactose resp. fructose.

- Alcohols, aldehydes and carboxylic acids show different concentration gradients between intolerant, malabsorbing and healthy people.

- Molecular pattern of intolerant and malabsorbing people are associated with specific symptoms like nausea, bloating or abdominal pain.

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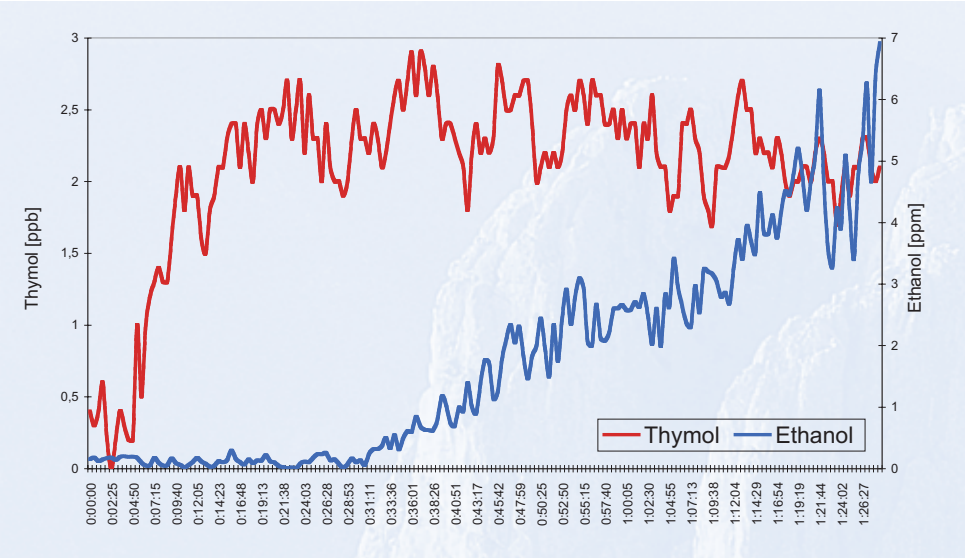
Pharmaceutical Use of Exhaled Breath

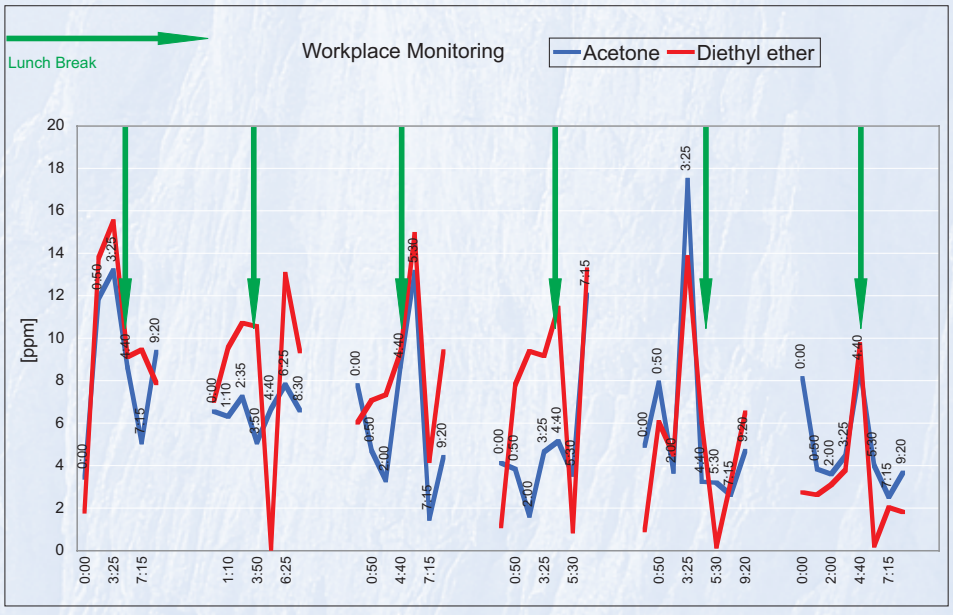
Ingestion of tablets containing 300 mg thymol followed by quantitative inline gasphase analysis



compound lower detection level	*resolution [ppb]*	*detector sampling [ppb]*	*time per cycle [msec]*
thymol	*0,2*	*0,1*	*2500*
isoprene	*50*	*10*	*300*
mass 61	*50*	*10*	*300*
ethanol	*100*	*20*	*150*

Workplace Measurement

Acetone and diethyl ether vapor exposure monitoring



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