

# Jugendschutz

Wo sind die Fragen?

ERFA Tag der SGAH  
Bern, den 6. November 2015

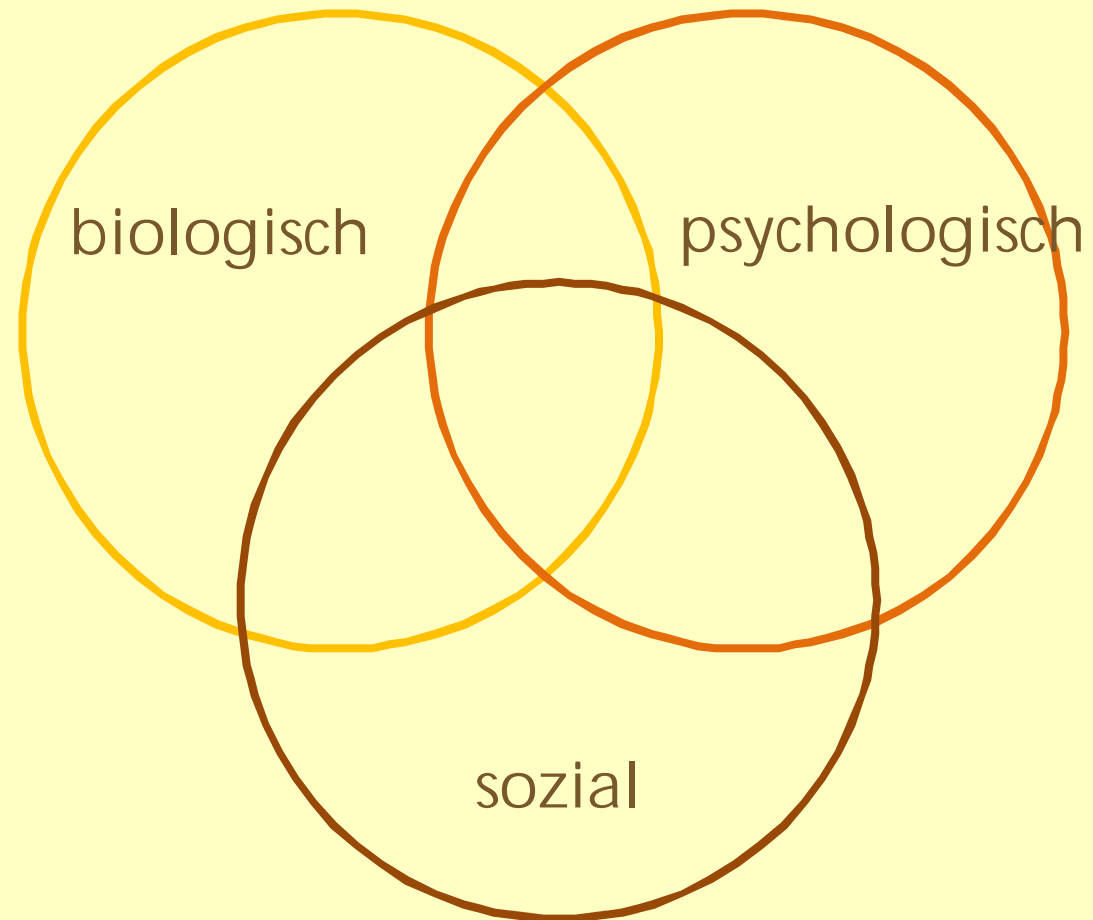
# Übersicht

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- Einführung
- Psychologische und biologische Entwicklung
- Arbeitssicherheit und Arbeitshygiene

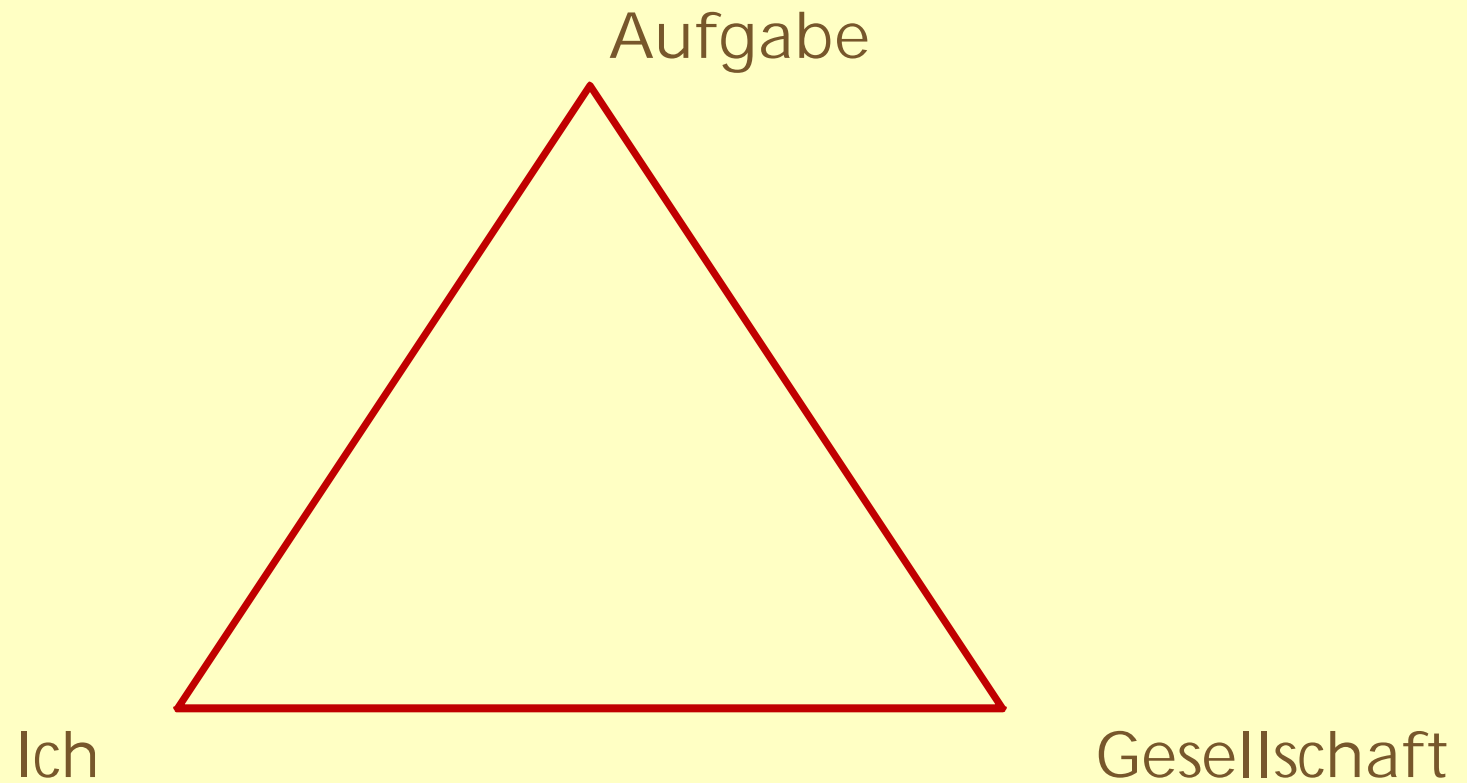
# Einführung

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# Psychologische und biologische Entwicklung

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Niemand hat das Recht zu gehorchen

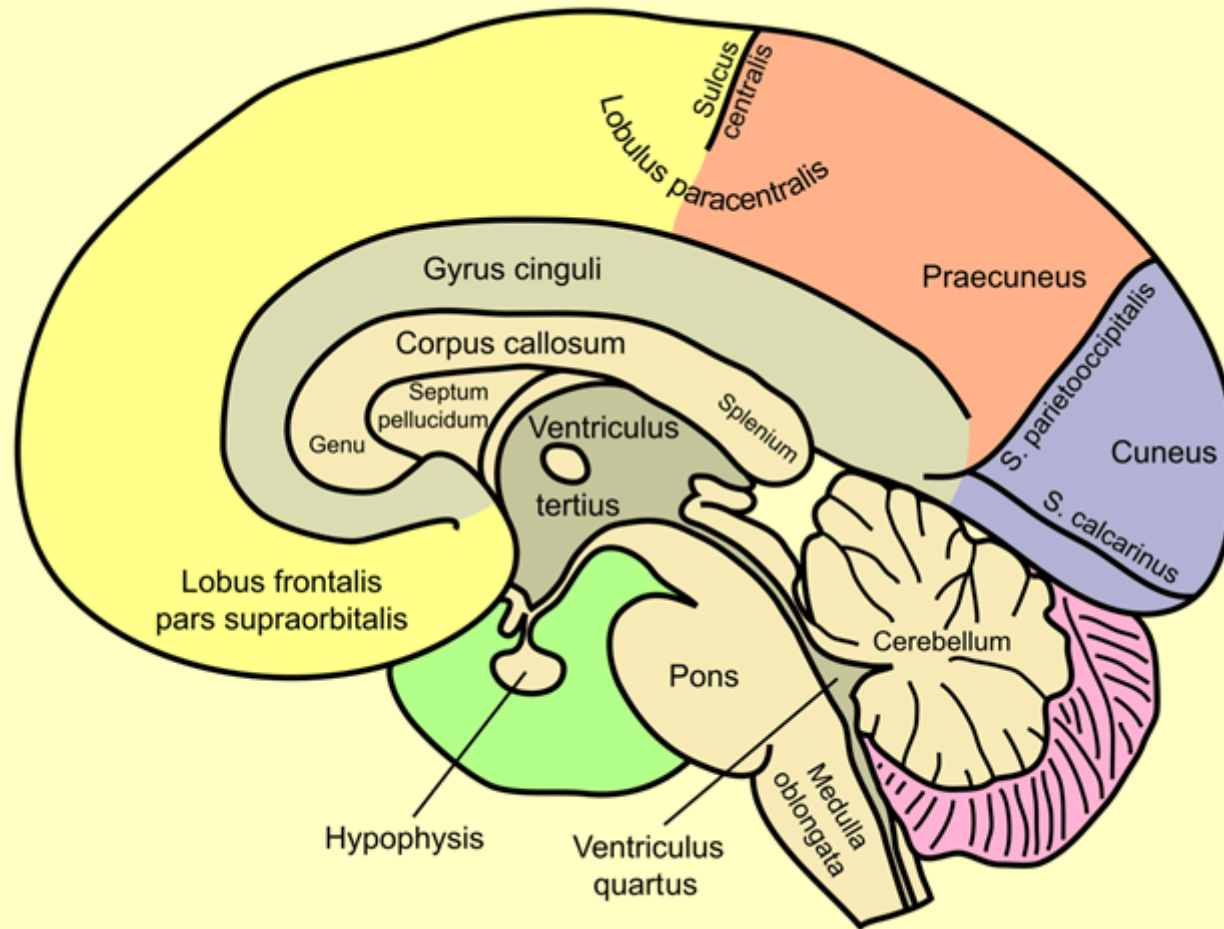
# Psychologische und biologische Entwicklung

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“ Compared to adults, adolescents are more susceptible to peer influence, less oriented to the future, more sensitive to short-term rewards, and more impulsive. This research on adolescent brain, cognitive, and psychosocial development supports the view that adolescents are fundamentally different from adults in ways that warrant their differential treatment in the justice system.”

“Adolescent Development and Juvenile Justice”, Laurence Steinberg, Annu. Rev. Clin. Psychol, 2009

# Psychologische und biologische Entwicklung



[https://commons.wikimedia.org/wiki/File:Gehirn,\\_medial\\_-\\_beschriftet\\_lat.svg#/media/File:Gehirn,\\_medial\\_-\\_beschriftet\\_lat.svg](https://commons.wikimedia.org/wiki/File:Gehirn,_medial_-_beschriftet_lat.svg#/media/File:Gehirn,_medial_-_beschriftet_lat.svg)

# Psychologische und biologische Entwicklung

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Adolescence is the last period of rapid cell growth. Exposure to pesticides, neurotoxicants, endocrine disruptors, allergens or carcinogens during this critical period can be dangerous.

Adolescent bodies absorb a higher dose of toxicants because of their relatively higher rate of breathing and metabolism per unit of body weight; and they can react more strongly to these toxicants than adults.

ILO 2011; Children in hazardous work: What we know, what we need to do

# Psychologische und biologische Entwicklung

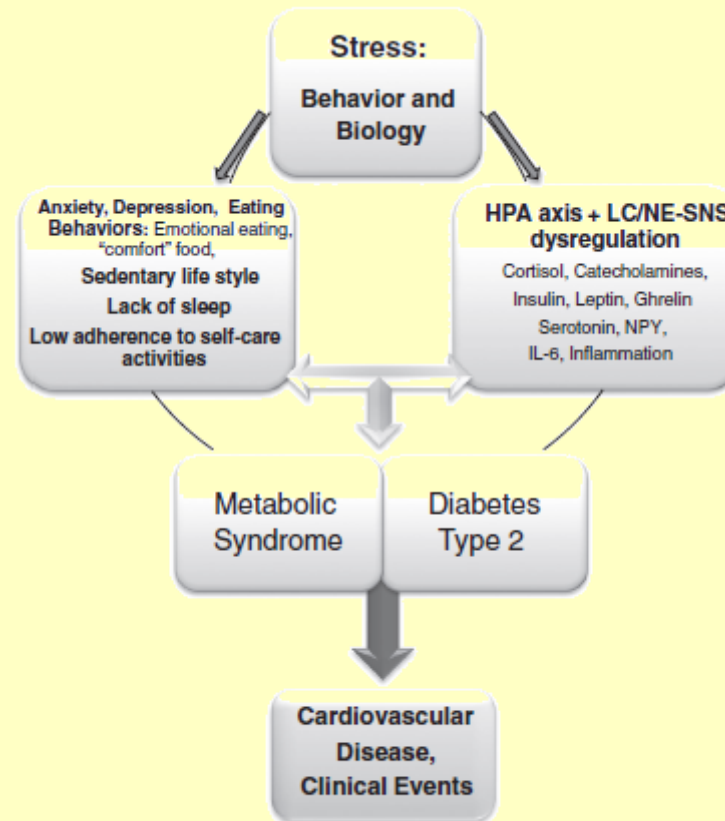


Fig. 2 - Biologic and behavioral pathways linking stress to obesity and the metabolic syndrome.

Metabolic consequences of stress during childhood and adolescence; Pervanidou & Chrousos; Metabolismus; 2012, 6:11 – 6:19



# Arbeitssicherheit und Arbeitshygiene

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Der Maximale Arbeitsplatzkonzentrationswert (MAK-Wert) ist die höchstzulässige Durchschnittskonzentration eines gas-, dampf- oder staub- förmigen Arbeitsstoffes in der Luft, die nach derzeitiger Kenntnis in der Regel bei Einwirkung während einer Arbeitszeit von 8 Stunden täglich und bis 42 Stunden pro Woche auch über längere Perioden bei der ganz stark überwiegenden Zahl der gesunden, am Arbeitsplatz Beschäftigten die Gesundheit nicht gefährdet.

SUVA 1903.d 2015

# Arbeitssicherheit und Arbeitshygiene

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We have shown that exposure to ambient air pollution is correlated with significant deficits in respiratory growth over an eight-year period, leading to clinically important deficits in lung function at the age of 18 years. The specific pollutants that were associated with these deficits included nitrogen dioxide, acid vapor, PM2.5, and elemental carbon.

W. James Gauderman et al; n engl j med 351; 11 ; 2004

# Arbeitssicherheit und Arbeitshygiene

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## Toluol

In recent decades the organic solvent toluene (methylbenzene) has emerged as one of the best-studied neurotoxins. Long-term and intense exposure to toluene vapors in humans who abuse spray paint and related substances has led to the recognition that toluene has a severe impact on central nervous system myelin.

FILLEY et al; Journal of Neuropathology & Experimental Neurology: 2004, 63, 1

# Arbeitssicherheit und Arbeitshygiene

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## n-Hexan

**CONCLUSION:** The results of present study showed that the serum MBP (myelin basic protein) levels of workers occupationally exposed to n-hexane significantly elevated, and the serum MBP can serve as the effective biomarker of n-hexane exposure.

Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2011 Jun;29(6):421-3.

# Arbeitssicherheit und Arbeitshygiene

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## Vanadium

Vanadium is a transition metal, and exposure to vanadium during early brain development produces hypomyelination with variety of related neuro-behavioral phenotypes. In the current study, we investigated mechanisms of hypomyelination induced by vanadium exposure in developing rat brain.

Todorich et al. Neurotox Res. 2011 Apr;19(3):361-73

# Arbeitssicherheit und Arbeitshygiene

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## Aluminium

Levels of urinary aluminium excretion similar to those seen in aluminium intoxication suggested that aluminium may be a hitherto unrecognized environmental factor associated with the aetiology of MS (Multiple Sclerosis).

Exley et al; Mult Scler September 2006 vol. 12 no. 5 533-540

The present results show that this mechanism could be involved both *in vivo* and *in vitro* in  $Al^{3+}$ -mediated oxidation of myelin. The oxidation of myelin components, lipids and proteins, could be one of the mechanisms involved in the neurotoxicity of  $Al^{3+}$

Sandra V. Verstraeten; Archives of Biochemistry and Biophysics; Vol. 344, No. 2, August 15, pp. 289–294, 1997

# Arbeitssicherheit und Arbeitshygiene

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## Radon

The most common exposures were solar radiation (9.1 million workers exposed at least 75% of working time), environmental tobacco smoke (7.5 million workers exposed at least 75% of working time), crystalline silica (3.2 million exposed), diesel exhaust (3.0 million), radon (2.7 million), and wood dust (2.6 million).

Timo Kauppinen et al; Occup Environ Med 2000;57:10-18

# Besten Dank



"I'm not lazy, I'm a consciousness objector."

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