

# CHRONIC PAIN AND MEDICINE USE AMONG ADOLESCENTS IN LATVIA FROM 1994 - 2010

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# Chronic pain among adolescents

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- Chronic pain  $\approx$  20% – 50% of adolescent population.

Weekly chronic pains: 10% – 30% headache, 10% – 25% – stomachache, bet 5% – 33% – musculoskeletal pain (Perquin et al., 2003; Ghandour et al., 2004; Petersen et al., 2006; Roth-Isigkeit, 2004, 2005; Sundblad et al. 2007; Larsson et al., 2007; Darlington et al., 2012).

- 1/3 of adolescents with chronic pain suffer from severe pain (Perquin et al., 2000; Bandell-Hoekstra et al., 2001).
- The prevalence of chronic pain over the last 20 years has been increasing in Europe (Bandell-Hoekstra et al., 2001; Berntsson et al., 2001; Hagquist et al., 2009).

# Chronic pain among adolescents

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- ❑ Chronic pain may affect the quality of life and everyday functioning in adolescents (Palermo, 2000; Frare et al., 2002; Eccleston et al., 2004; Powers et al., 2006, Larsson et al., 2007).
- ❑ Children with chronic pain are at an increased risk of chronic pain and other somatic and psychological symptoms in adulthood (Fearon & Hotoph, 2001; Hotoph, 2002; Jones, 2005; Walker, 2010; Dengler-Crish, 2011).
- ❑ Chronic pain is significant economic burden in adolescent health care (Sleed et al., 2005).

# Research questions

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- ❑ What are the trends of chronic pain among adolescents in general population?
- ❑ What are the trends of medicine use among adolescents in general population?
- ❑ What is the association between chronic pain and medicine use among adolescents in general population?

# Methodology

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- ❑ WHO supported Health Behaviour Study in School-aged Children (HBSC) in Latvia.
- ❑ Measurement – standardized questionnaire
- ❑ Target group: 11-, 13-, 15-year old adolescents in general population.
- ❑ Sampling: random cluster sampling (schools – classes – students).
- ❑ Survey years: 1994, 1998, 2002, 2006, 2010.
- ❑ Total sample: 19603 adolescents.

# Statistical analysis

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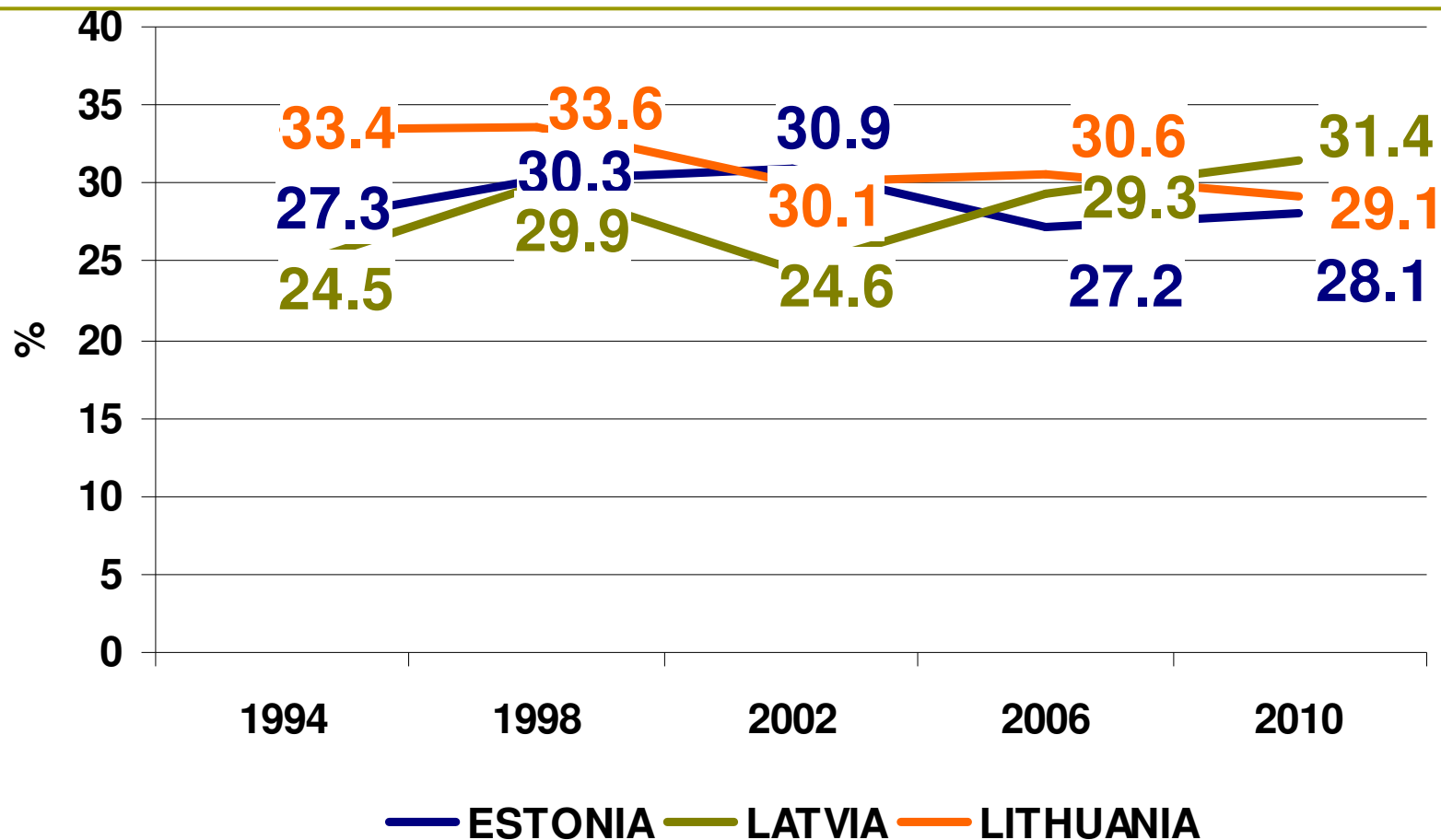
- Confidence interval – 95%
- Linear regression – trend analysis
- Log-linear analysis – association between chronic pains
- Multilevel logistic regression with random intercept model – association between chronic pain and medicine use by assessing the effect of HBSC survey year on the probability of using medicines.

# Target variables

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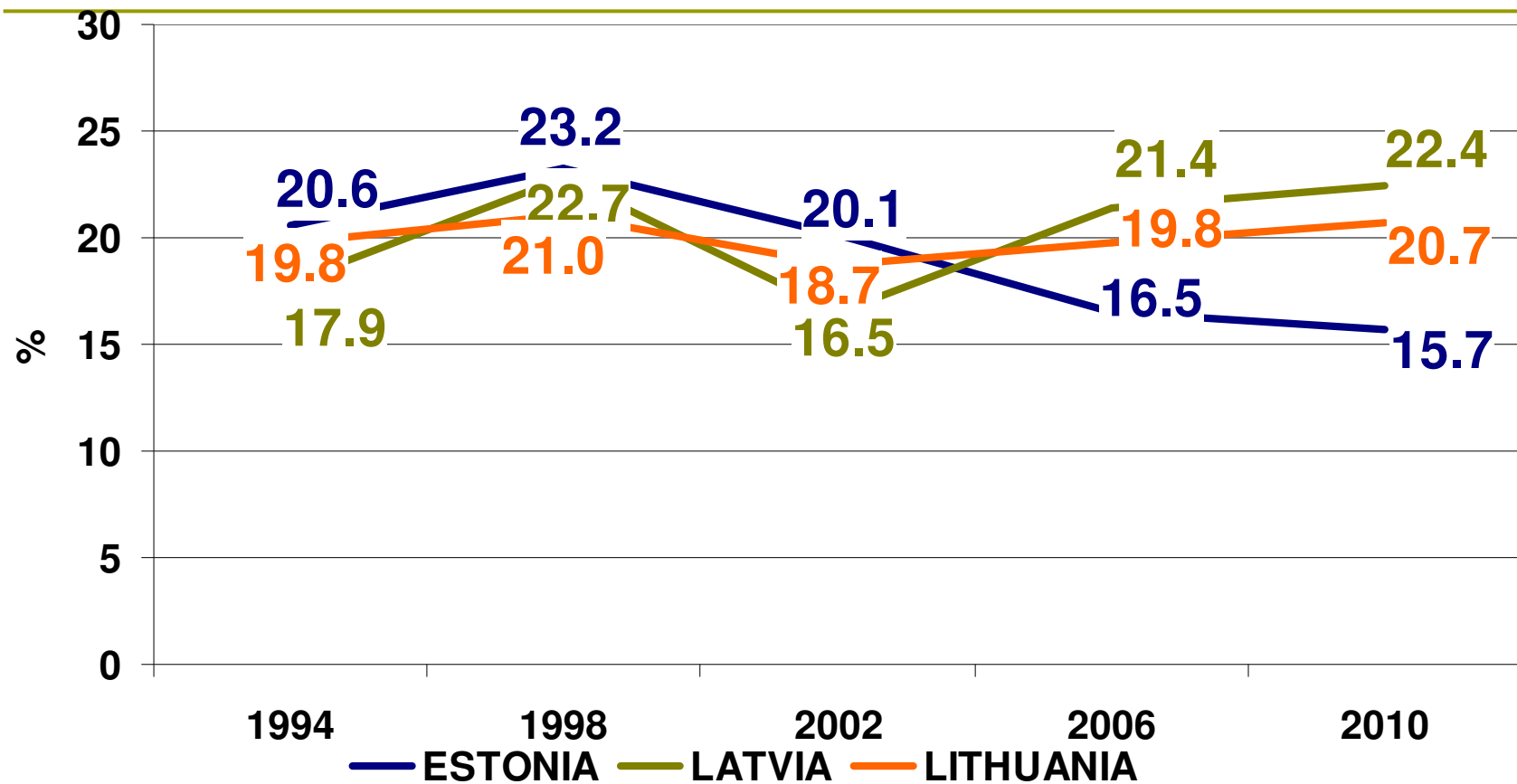
- Chronic pain (headache, stomach-ache, backache) – at least weekly during the last six months.
- Medicine use last month for:
  - headache,
  - stomach-ache,
  - nervousness,
  - difficulties in getting to sleep.

# Trends of chronic headache among adolescents in Baltic countries (%)

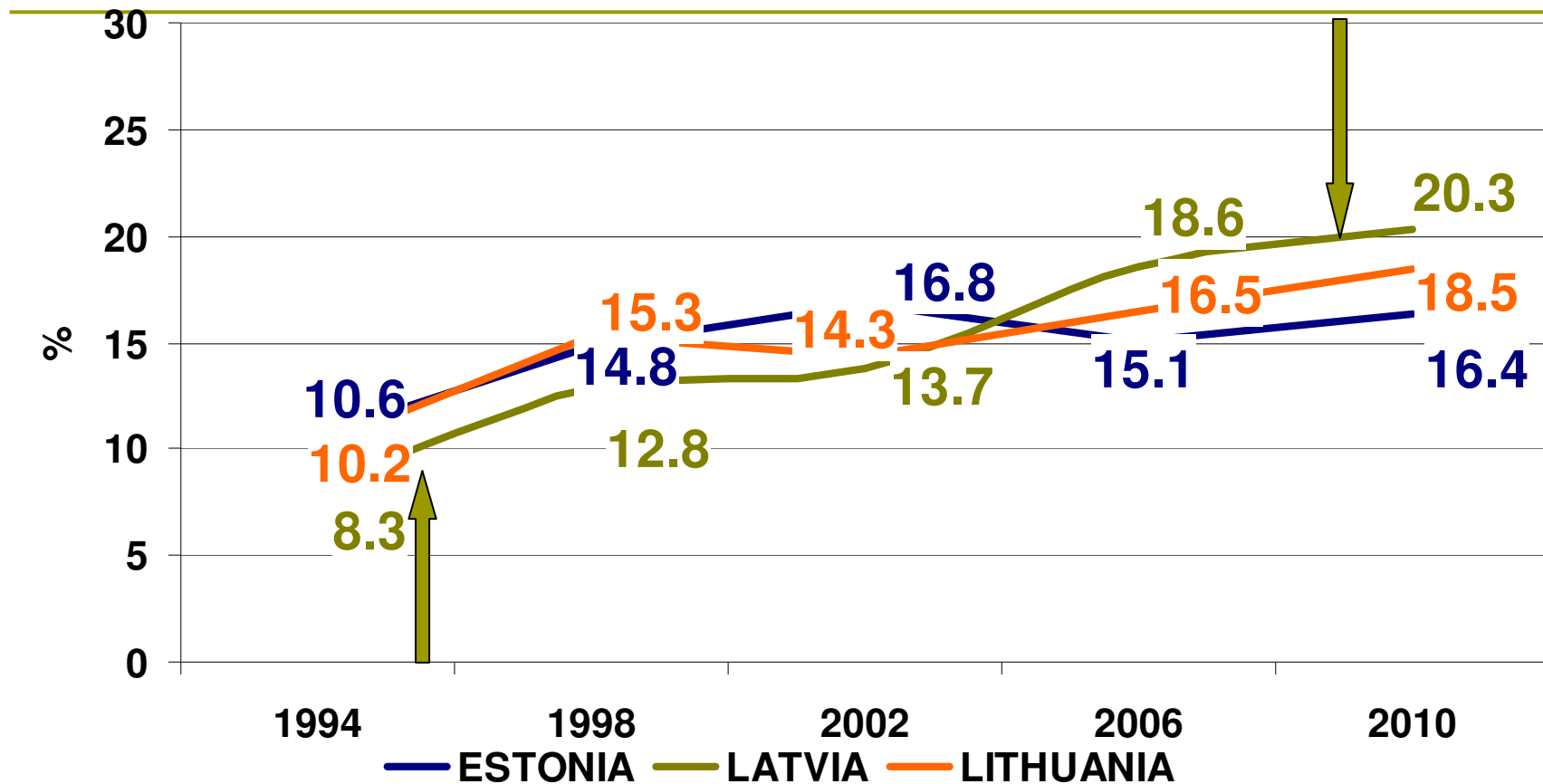




# Trends of chronic stomach-ache among adolescents in Baltic countries (%)

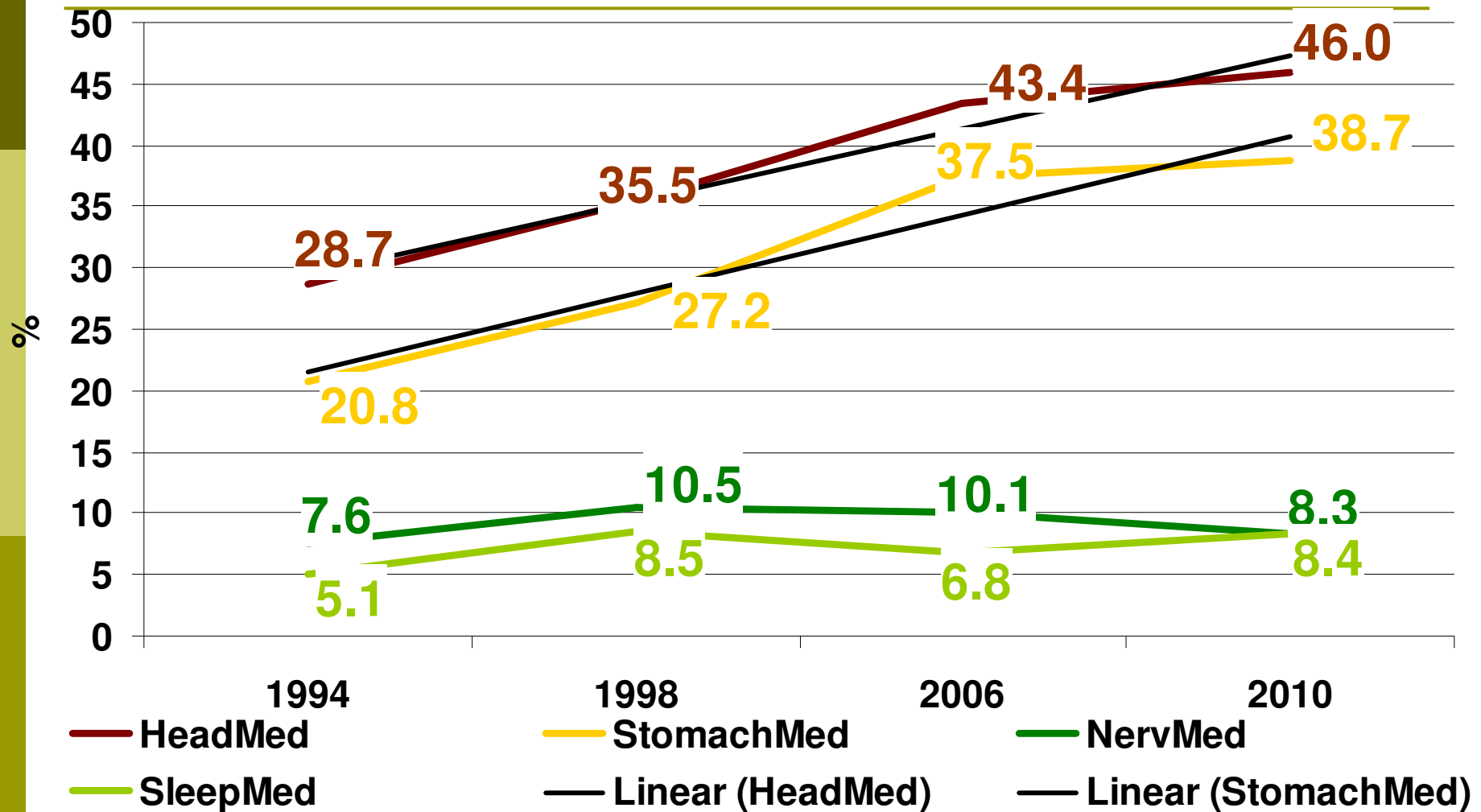


# Trends of chronic backache among adolescents in Baltic countries (%)



Backache Latvia:  $p < 0.01$

# Trends of medicine use among adolescents in Latvia (%)



# The odds of medicine use among adolescents with chronic pain\*

	HeadMed		StomachMed		SleepMed		NervMed	
	OR	95%CI	OR	95%CI	OR	5%CI	OR	95%CI
<b>Headache</b>	<b>3.70***</b>	3.43 – 4.00	<b>1.59***</b>	1.48 – 1.71	<b>1.82***</b>	1.60 – 2.08	<b>2.09***</b>	1.87 – 2.35
<b>Stomachache</b>	<b>1.84***</b>	1.70 – 2.00	<b>3.37***</b>	3.10 – 3.67	<b>1.78***</b>	1.55 – 2.04	<b>1.91***</b>	1.69 – 2.15
<b>Backache</b>	<b>1.48***</b>	1.35 – 1.62	<b>1.36***</b>	1.24 – 1.49	<b>1.87***</b>	1.60 – 2.18	<b>1.70***</b>	1.48 – 1.95

Multilevel logistic regression analysis. Odds ratio (OR), 95% confidence intervals (CI).

\* **Age-, sex- adjusted**

Reference category: pain less than weekly

\*p<0.05; \*\* p<0.01; \*\*\* p<0.001

# The combination of weekly health complaints for adolescents with chronic pain\*

	Headache		Stomachache		Sleeping difficulties		Nervousness	
	OR	95%CI	OR	95%CI	OR	95%CI	OR	95%CI
<b>Headache</b>			<b>5.93***</b>	5.49 – 6.40	<b>2.75***</b>	2.55 – 2.97	<b>3.13***</b>	2.91 – 3.38
<b>Stomachache</b>	<b>5.93***</b>	5.49 – 6.40			<b>2.44***</b>	2.24 – 2.64	<b>3.15***</b>	2.90 – 3.42
<b>Backache</b>	<b>3.71***</b>	3.39 – 4.07	<b>4.14***</b>	3.76 – 4.55	<b>2.43***</b>	2.24 – 2.65	<b>2.86***</b>	2.60 – 3.14

Multilevel logistic regression analysis. Odds ratio (OR), 95% confidence intervals (CI).

\* **Age-, sex- adjusted**

Reference category: pain less than weekly

\*p<0.05; \*\* p<0.01; \*\*\* p<0.001

# Conclusions

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- ❑ Chronic pain and medicine use is prevalent among adolescents in Latvia.
- ❑ Particularly urgent issue is the increase of chronic backache and medicine use for pains among adolescents in Latvia.
- ❑ Adolescents with chronic pain may constitute a separate risk group for multiple psychosocial and health problems.