



Euro Heart Survey Programme

ESC Quality Assurance Programme to Improve Cardiac Care in Europe

The EUROASPIRE Surveys

**Time trends in lifestyle, risk factor and
therapeutic management of coronary patients
1995 - 2007**

**Lessons learned from the Euro Heart Survey
Programme**

Professor David A Wood

**on behalf of the Survey Expert Committee and all
investigators participating in the Euro Heart Survey on
Preventive Cardiology**



Participating centres



EUROASPIRE

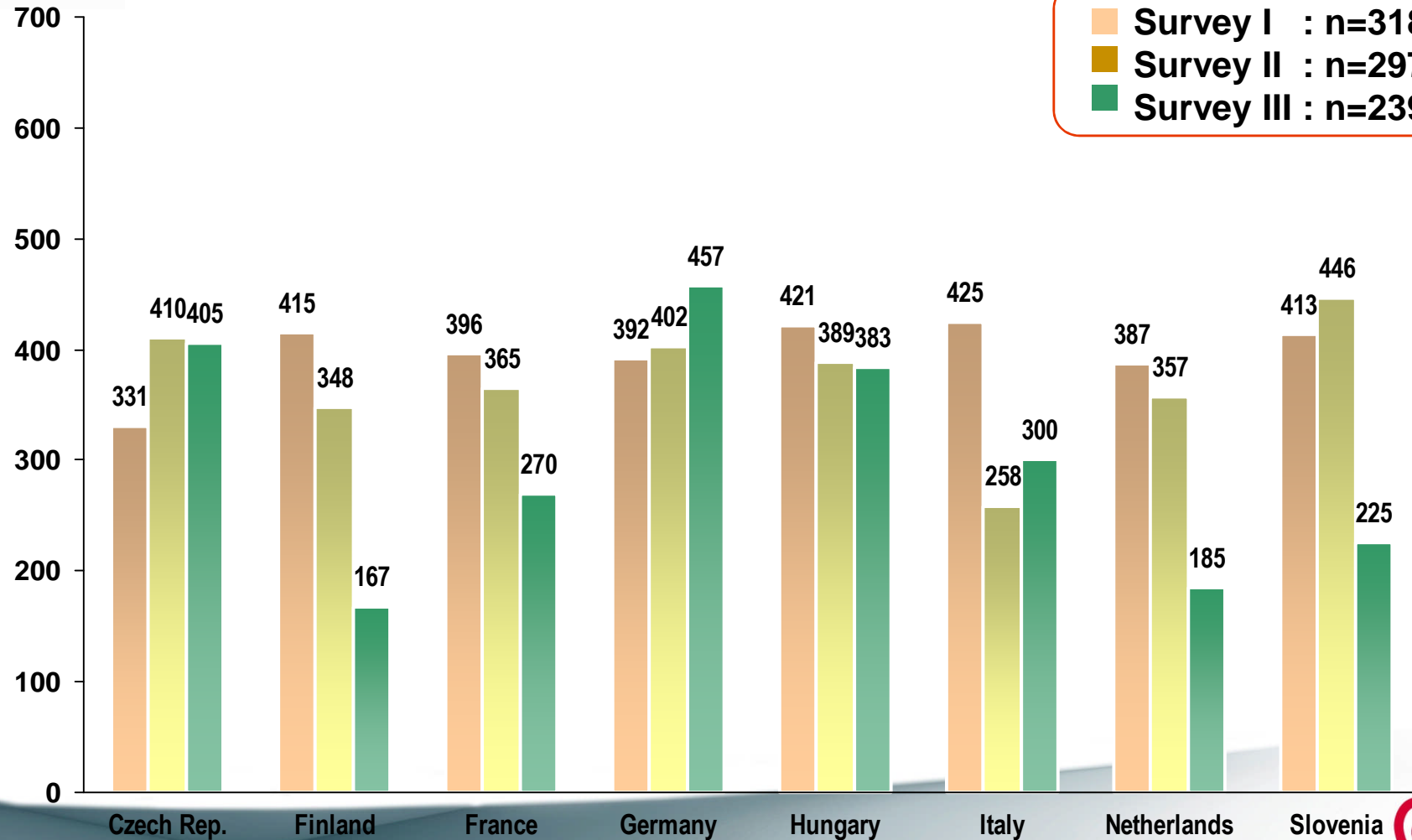
	Survey I	Survey II	Survey III
Czech Republic	<i>Pilsen Prague</i>	<i>Pilsen Prague</i>	<i>Pilsen Prague</i>
Finland	<i>Kuopio</i>	<i>Kuopio</i>	<i>Kuopio</i>
France	<i>Lille Lomme Roubaix Tourcoing</i>	<i>Lille Lomme Roubaix Tourcoing</i>	<i>Lille Lomme Roubaix Tourcoing</i>
Germany	<i>Münster</i>	<i>Münster</i>	<i>Münster</i>
Hungary	<i>Budapest</i>	<i>Budapest</i>	<i>Budapest</i>
Italy	<i>Udine Treviso Verona</i>	<i>Treviso Verona</i>	<i>Udine Venice Verona</i>
The Netherlands	<i>Rotterdam</i>	<i>Rotterdam</i>	<i>Rotterdam</i>
Slovenia	<i>Ljubljana</i>	<i>Ljubljana</i>	<i>Ljubljana</i>

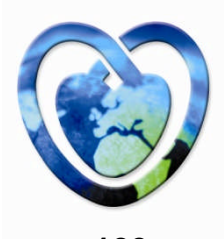


Size of Study Populations

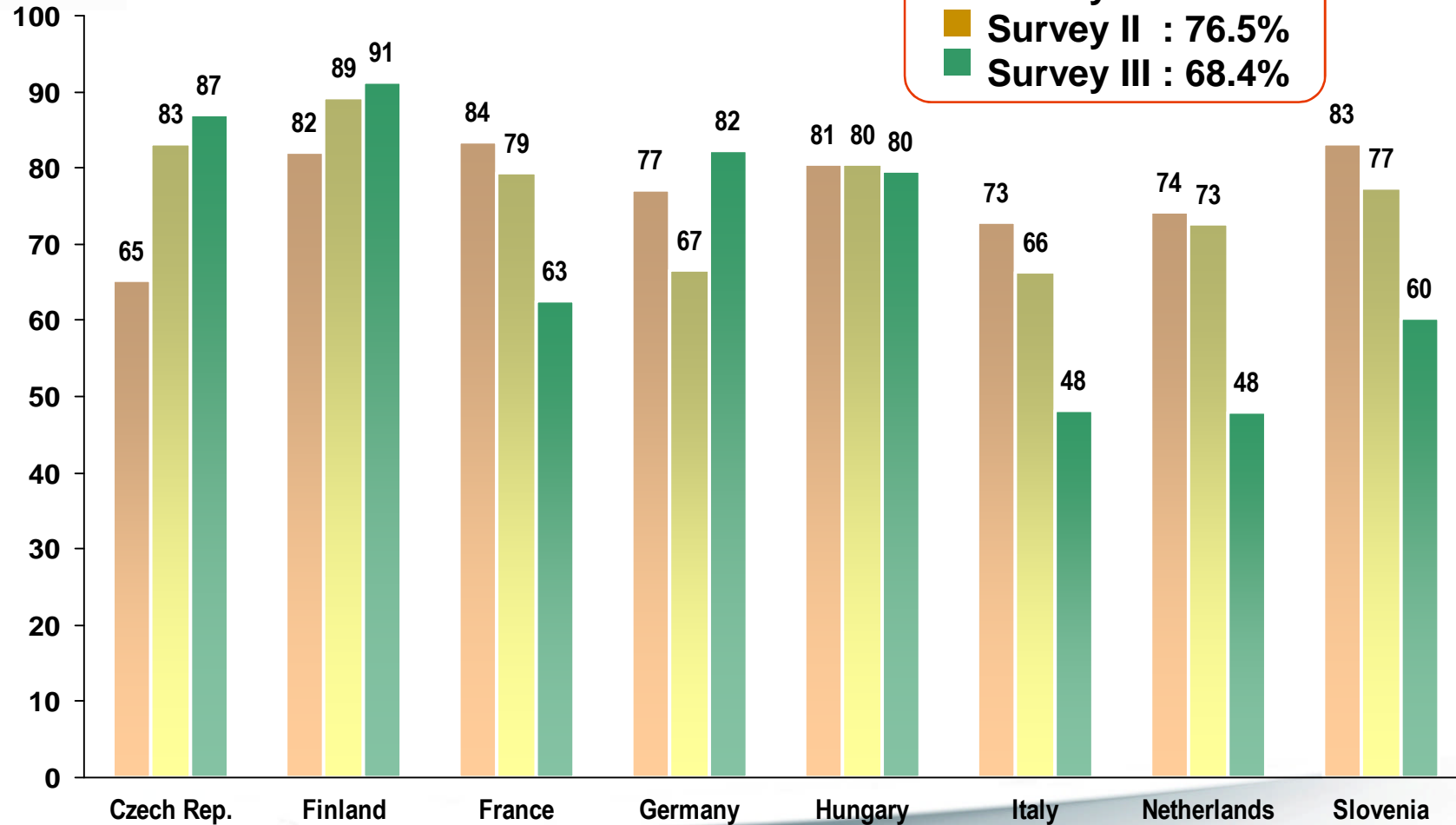


Survey I : n=3180
Survey II : n=2975
Survey III : n=2392



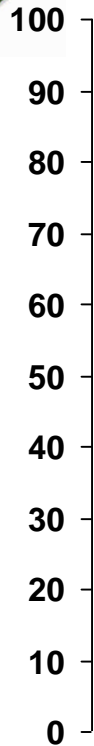


Participation rates*



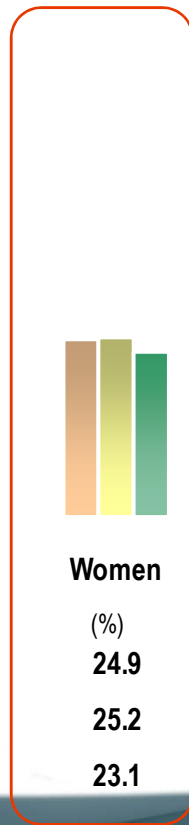


Distribution of Age, Gender and Diagnostic Category

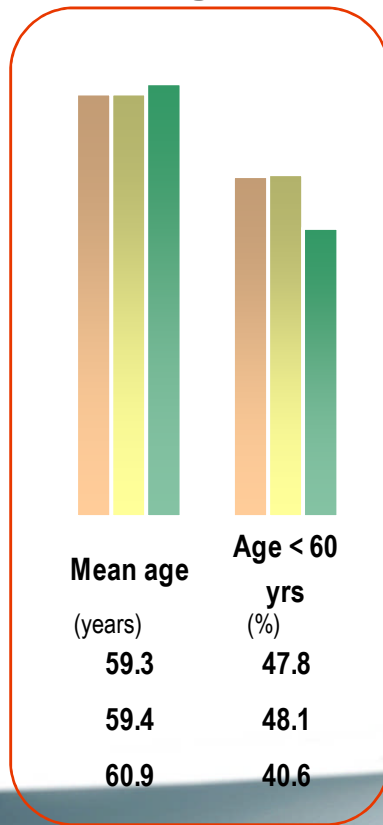


- Survey 1
- Survey 2
- Survey 3

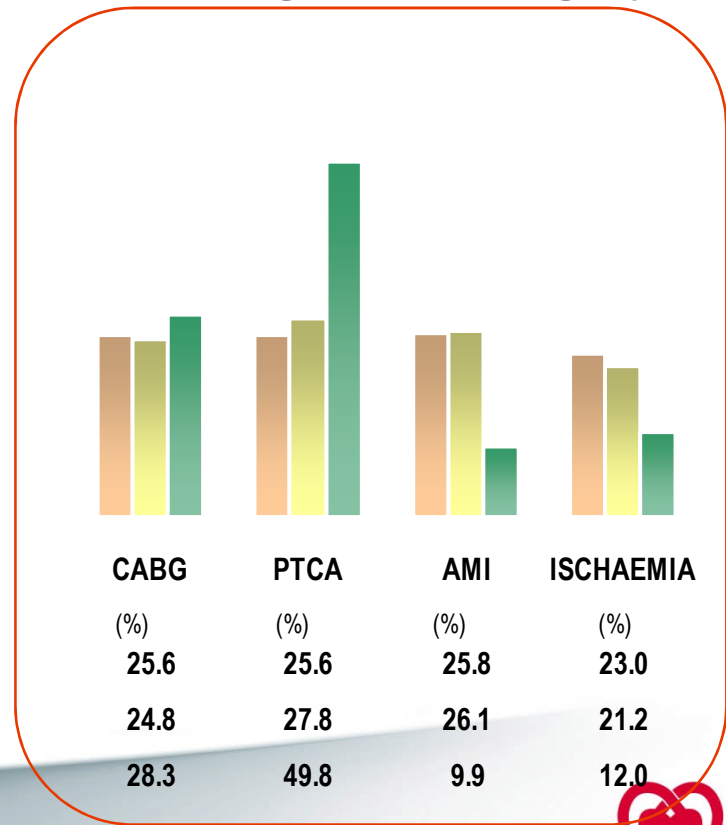
Gender



Age

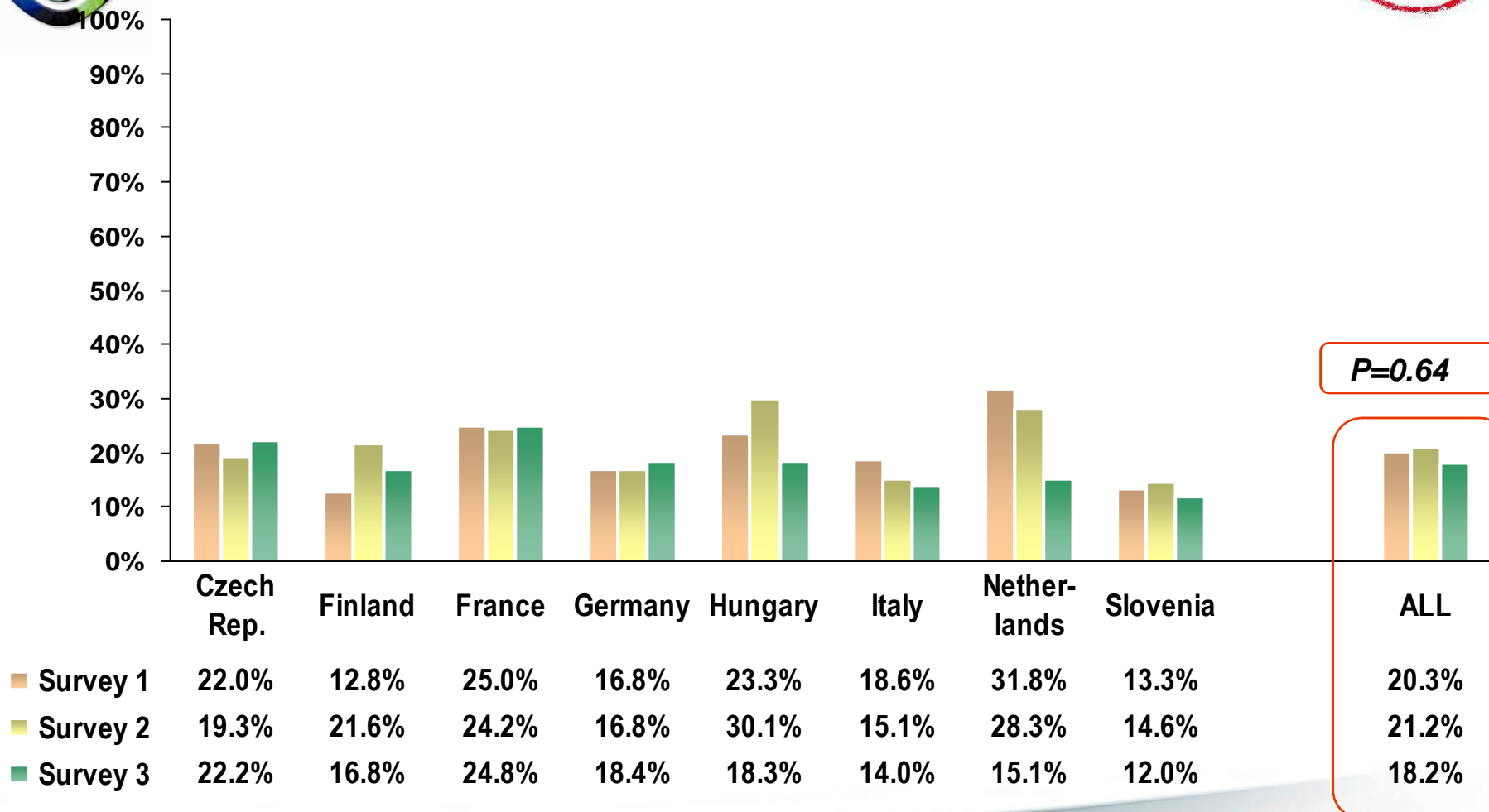


Diagnostic category





Prevalence of Smoking*



* Self-reported smoking or CO in breath > 10 ppm

S2 vs. S1 : P=0.83

S3 vs. S2 : P=0.37

S3 vs. S1 : P=0.48

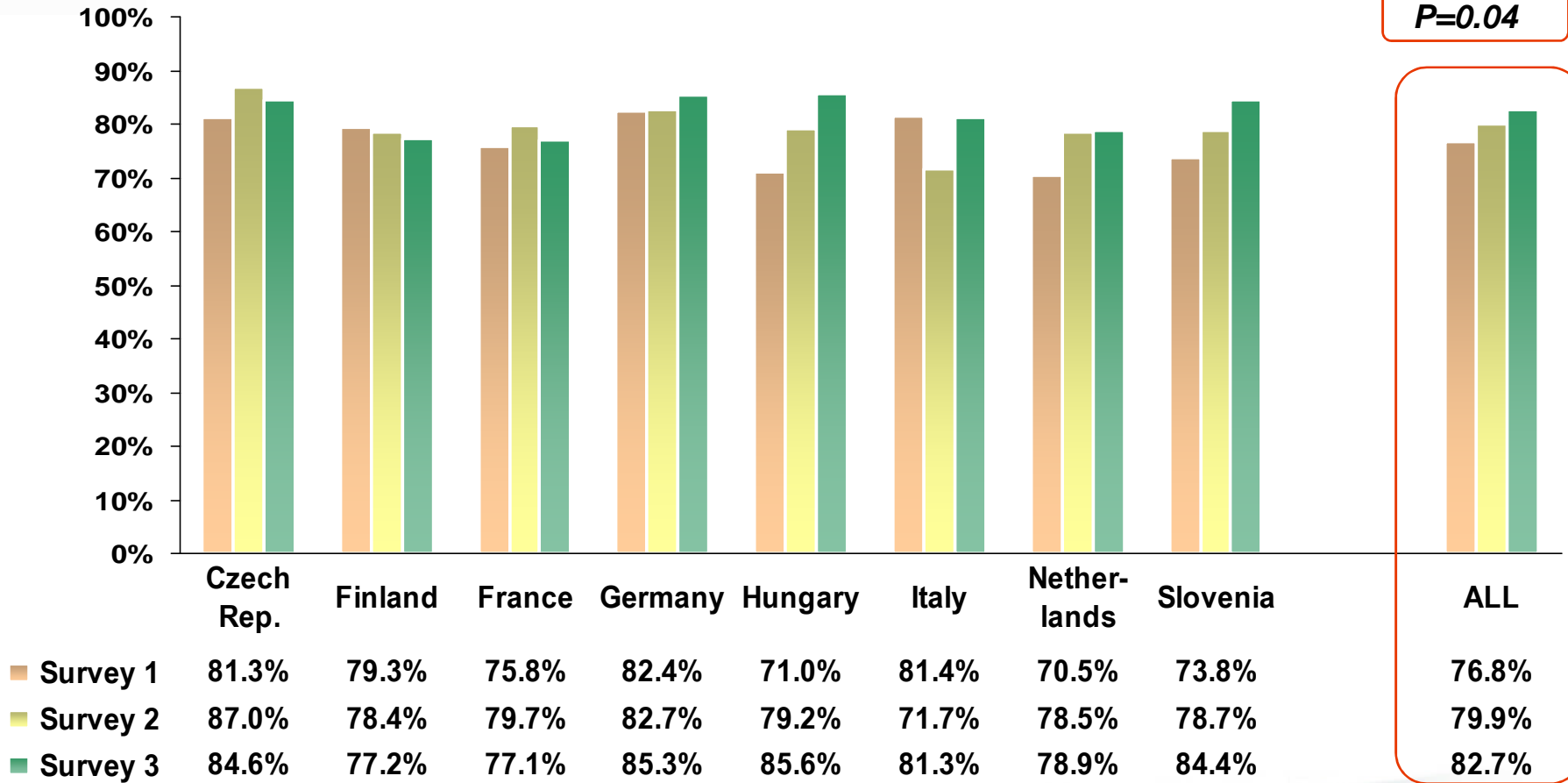




Prevalence of Overweight*



P=0.04



* Body mass index ≥ 25 kg/m²

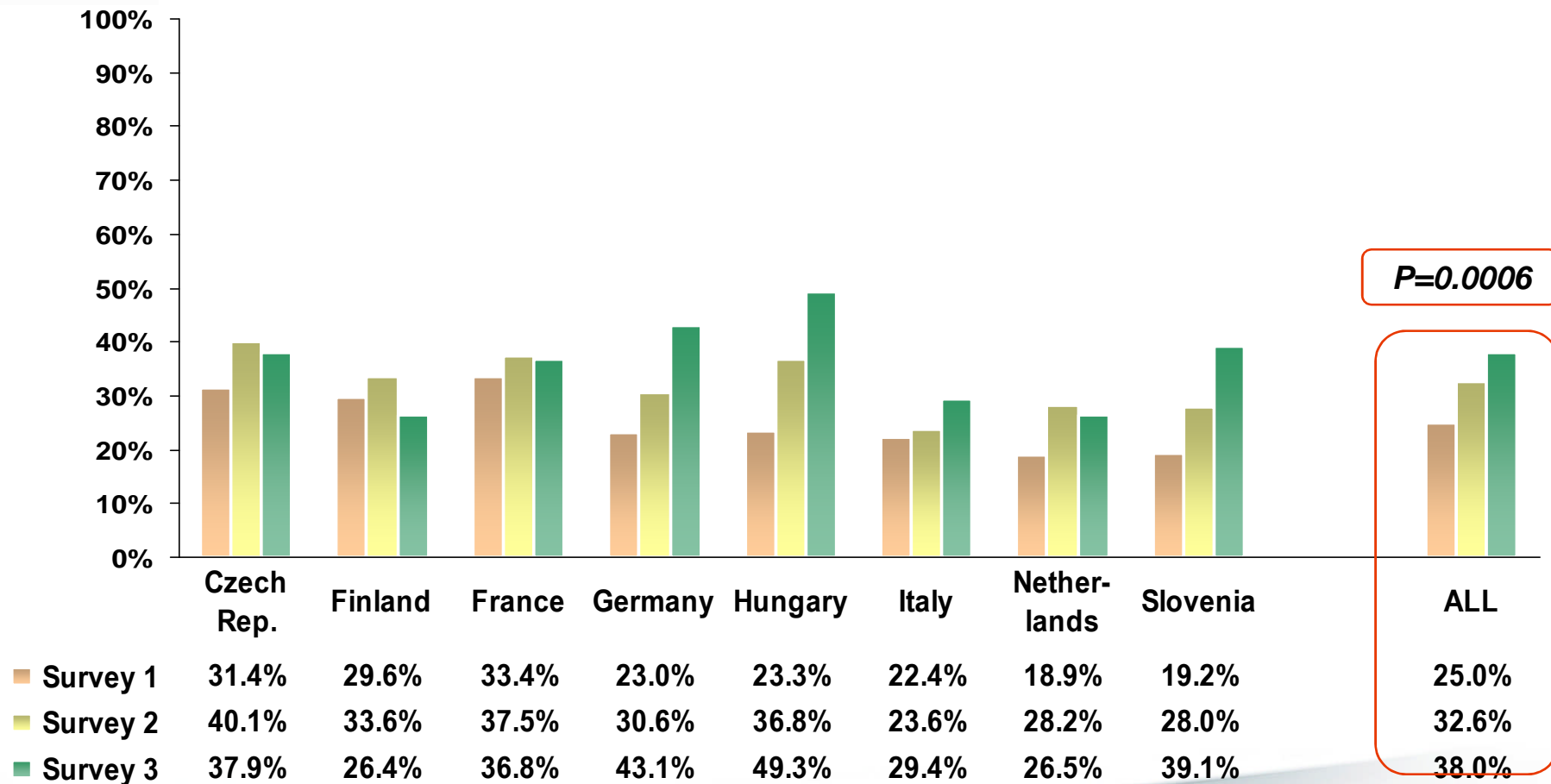
S2 vs. S1 : P=0.15
 S3 vs. S2 : P=0.22
 S3 vs. S1 : P=0.02



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Prevalence of Obesity*



* Body mass index ≥ 30 kg/m²

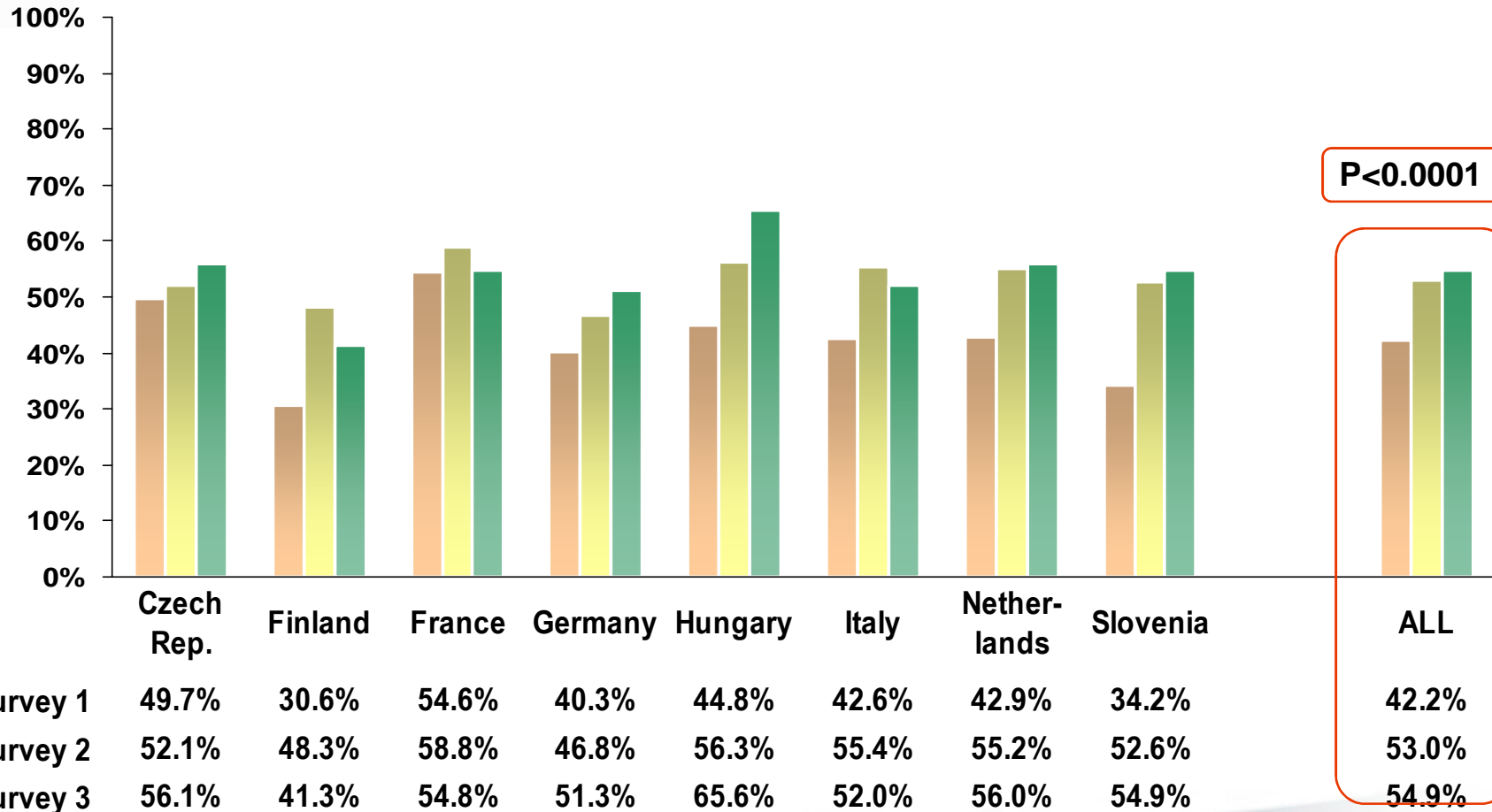
S2 vs. S1 : P=0.009

S3 vs. S2 : P=0.051

S3 vs. S1 : P=0.0002



Prevalence of Central Obesity*



* Waist circumference \geq 102 cm in men or \geq 88 cm in women

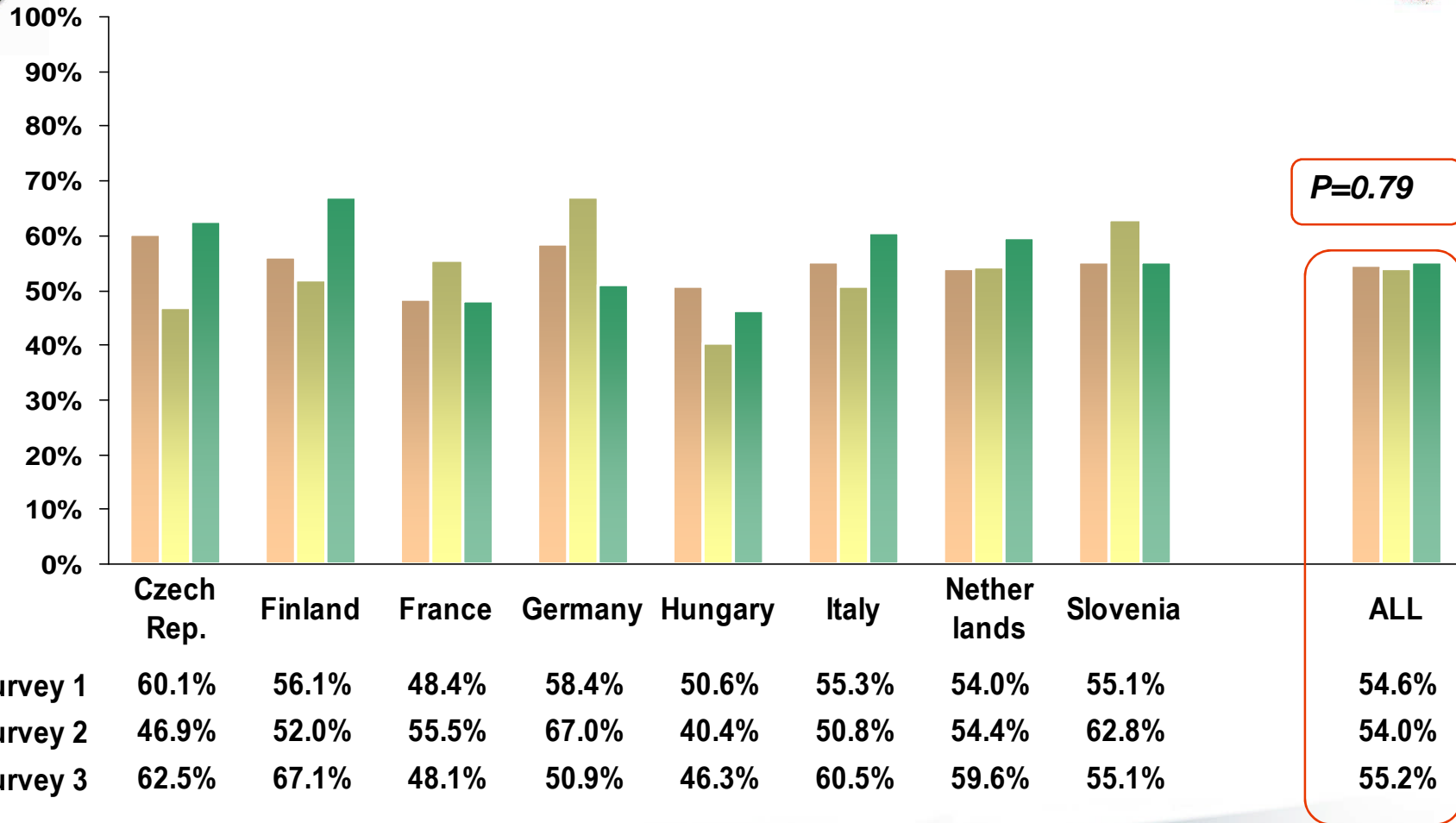
S2 vs. S1 : P=0.0001

S3 vs. S2 : P=0.47

S3 vs. S1 : P<0.0001



Prevalence of Raised Blood Pressure (1)*



* SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg

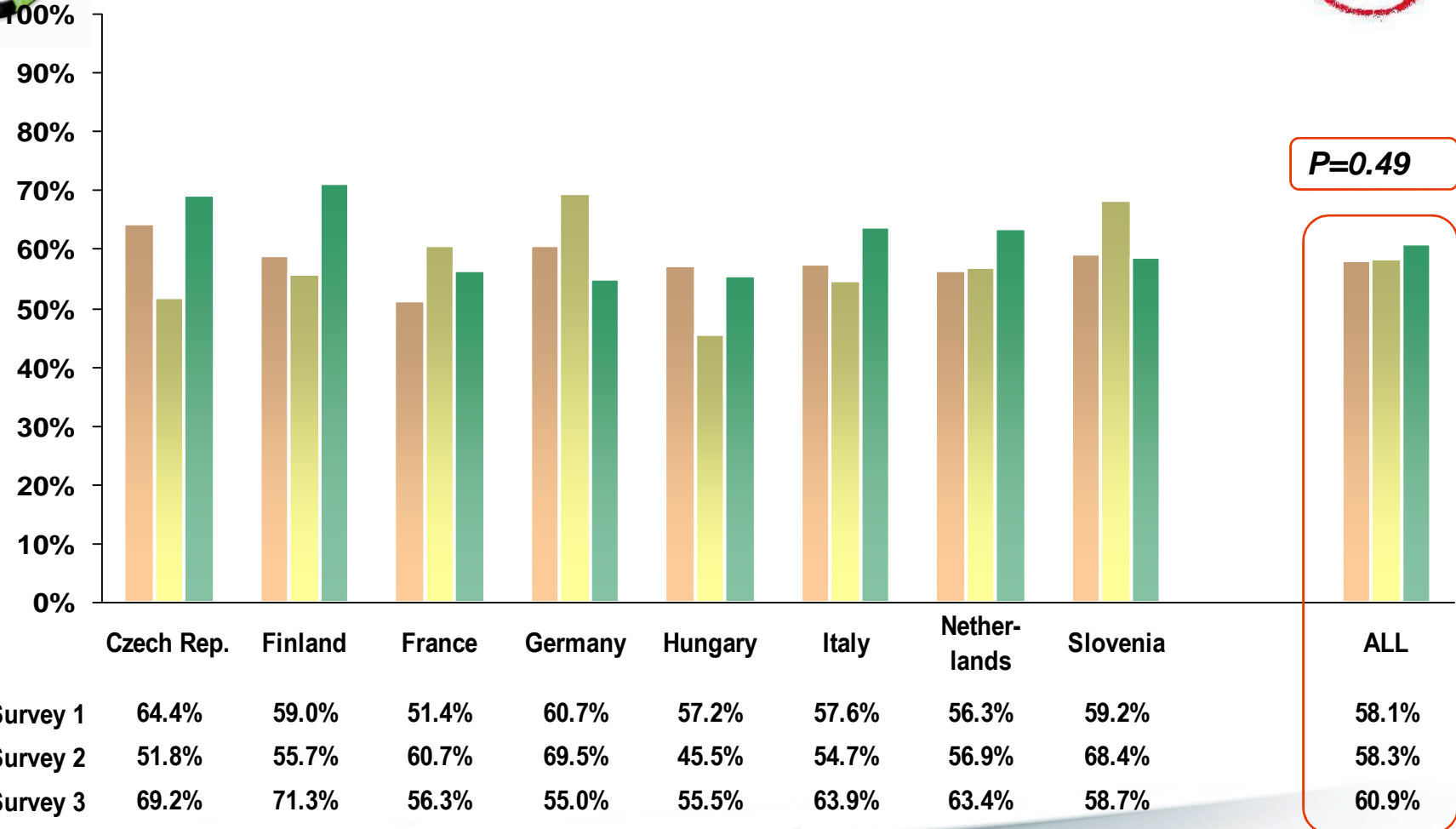
S2 vs. S1 : P=0.83
 S3 vs. S2 : P=0.51
 S3 vs. S1 : P=0.65



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Prevalence of Raised Blood Pressure (2)*



* SBP/DBP \geq 140/90 mmHg for non-diabetics or \geq 130/80 mmHg diabetics

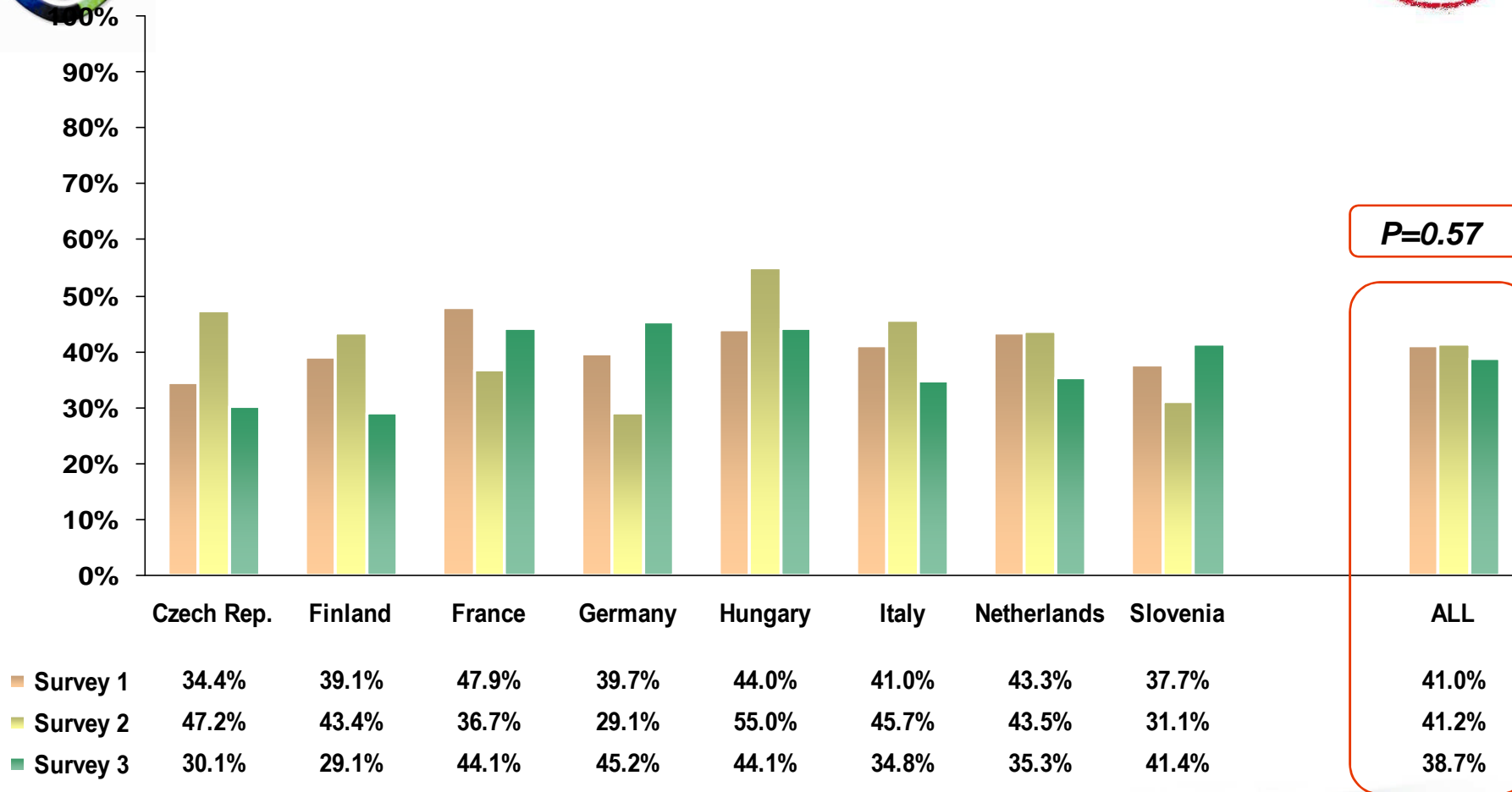
S2 vs. S1 : P=0.99

S3 vs. S2 : P=0.30

S3 vs. S1 : P=0.30



Therapeutic Control of Blood Pressure*



* SBP/DBP < 140/90 mmHg for non-diabetics or < 130/80 mmHg for diabetics

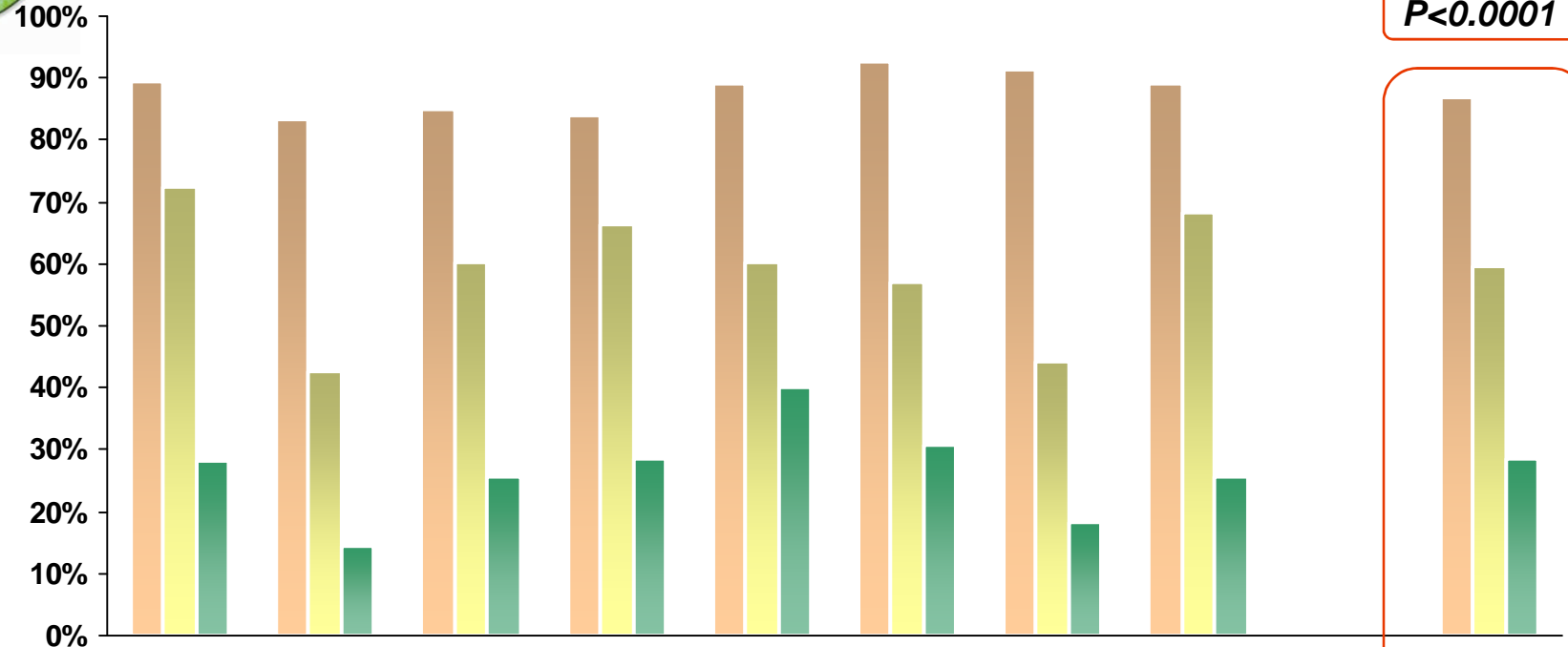
S2 vs. S1 : P=0.98

S3 vs. S2 : P=0.36

S3 vs. S1 : P=0.37



Prevalence of Raised Total Cholesterol (1)*



P < 0.0001

	Czech Rep.	Finland	France	Germany	Hungary	Italy	Netherlands	Slovenia	ALL
Survey 1	89.4%	83.3%	84.8%	84.1%	89.0%	92.5%	91.2%	89.0%	87.0%
Survey 2	72.5%	42.6%	60.2%	66.3%	60.2%	56.9%	44.3%	68.3%	59.6%
Survey 3	28.1%	14.5%	25.5%	28.4%	40.2%	30.7%	18.2%	25.5%	28.5%

* Total cholesterol ≥ 5.0 mmol/L

S2 vs. S1 : P < 0.0001
 S3 vs. S2 : P < 0.0001
 S3 vs. S1 : P < 0.0001

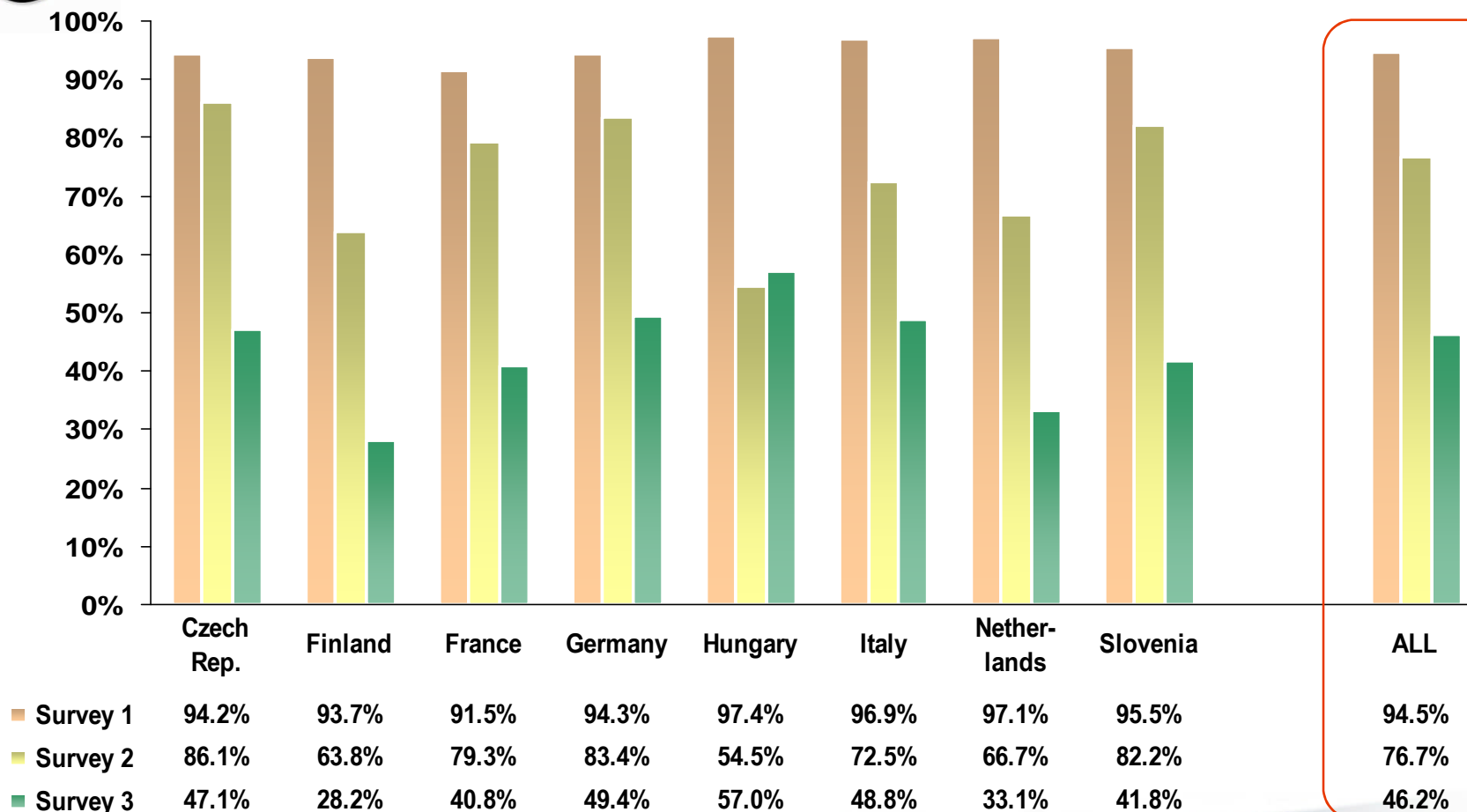




Prevalence of Raised Total Cholesterol (2)*



$P < 0.0001$



* Total cholesterol ≥ 4.5 mmol/L

S2 vs. S1 : $P < 0.0001$

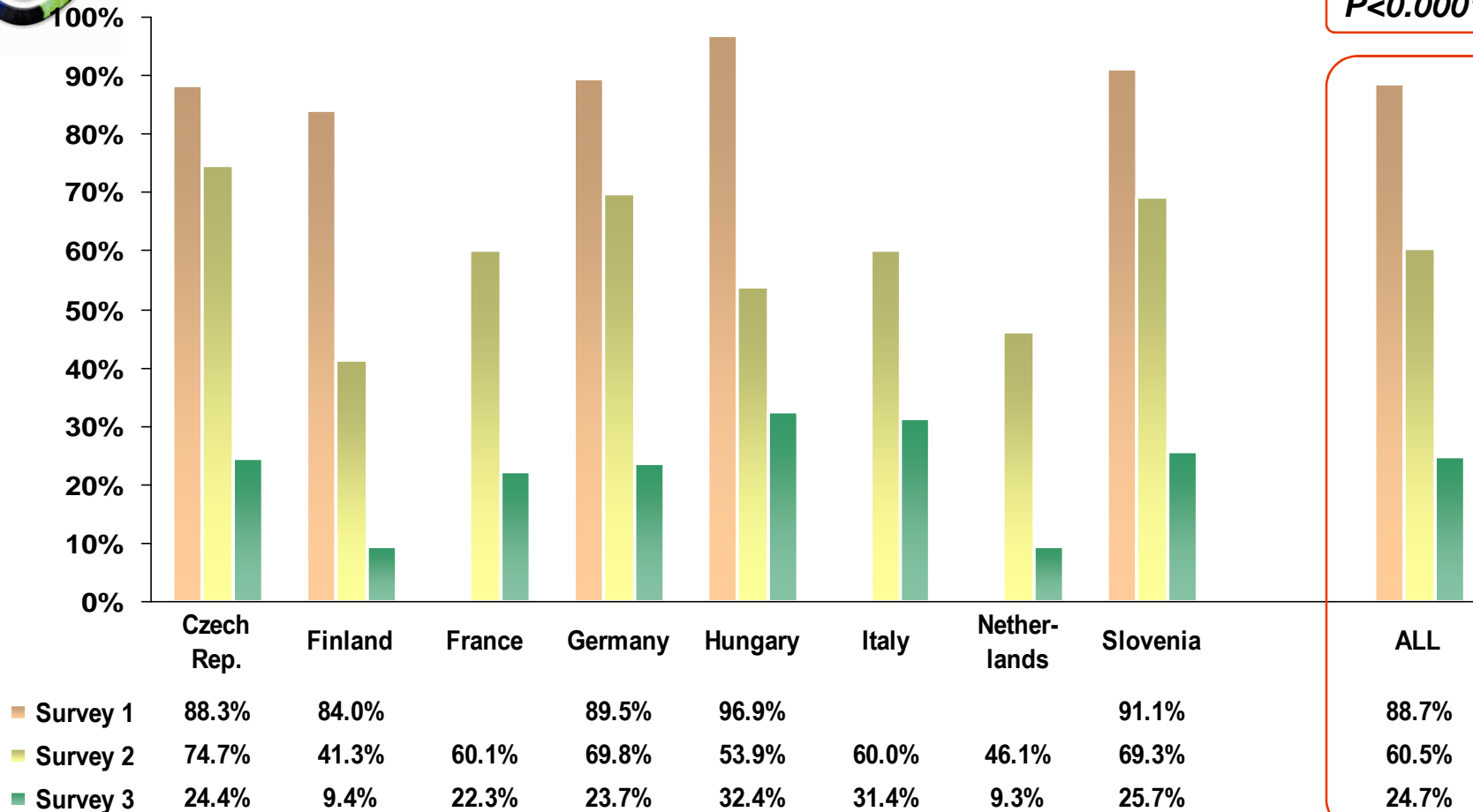
S3 vs. S2 : $P < 0.0001$

S3 vs. S1 : $P < 0.0001$





Prevalence of Raised LDL Cholesterol (1)*



* LDL C \geq 3 mmol/L for patients fasting for at least 6 hours
(calculated according to Friedewald formula)

S2 vs. S1 : P < 0.0001

S3 vs. S2 : P < 0.0001

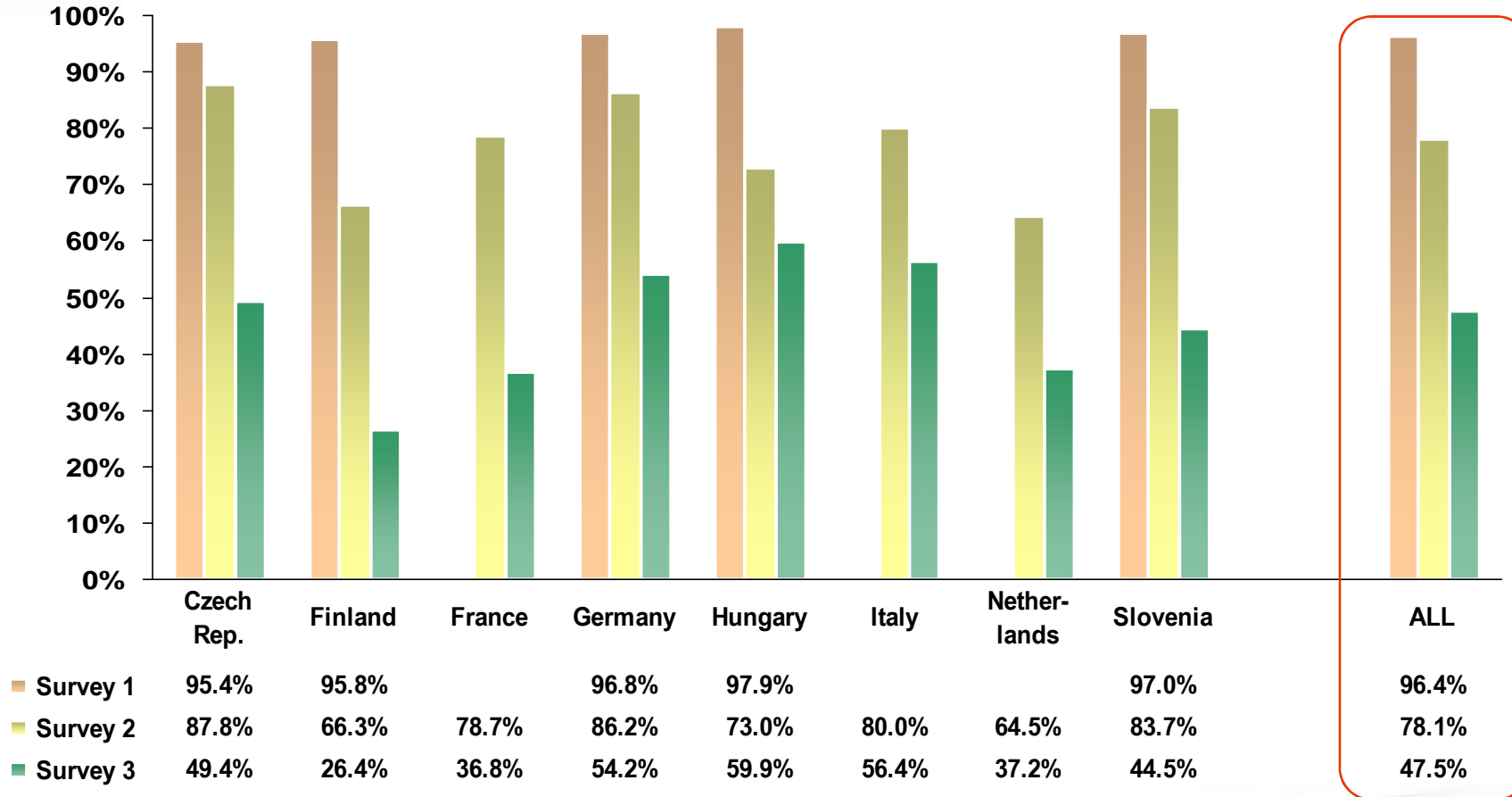
S3 vs. S1 : P < 0.0001



Prevalence of Raised LDL Cholesterol (2)*



$P < 0.0001$



•LDL C ≥ 2.5 mmol/L for patients fasting for at least 6 hours
(calculated according to Friedewald formula)

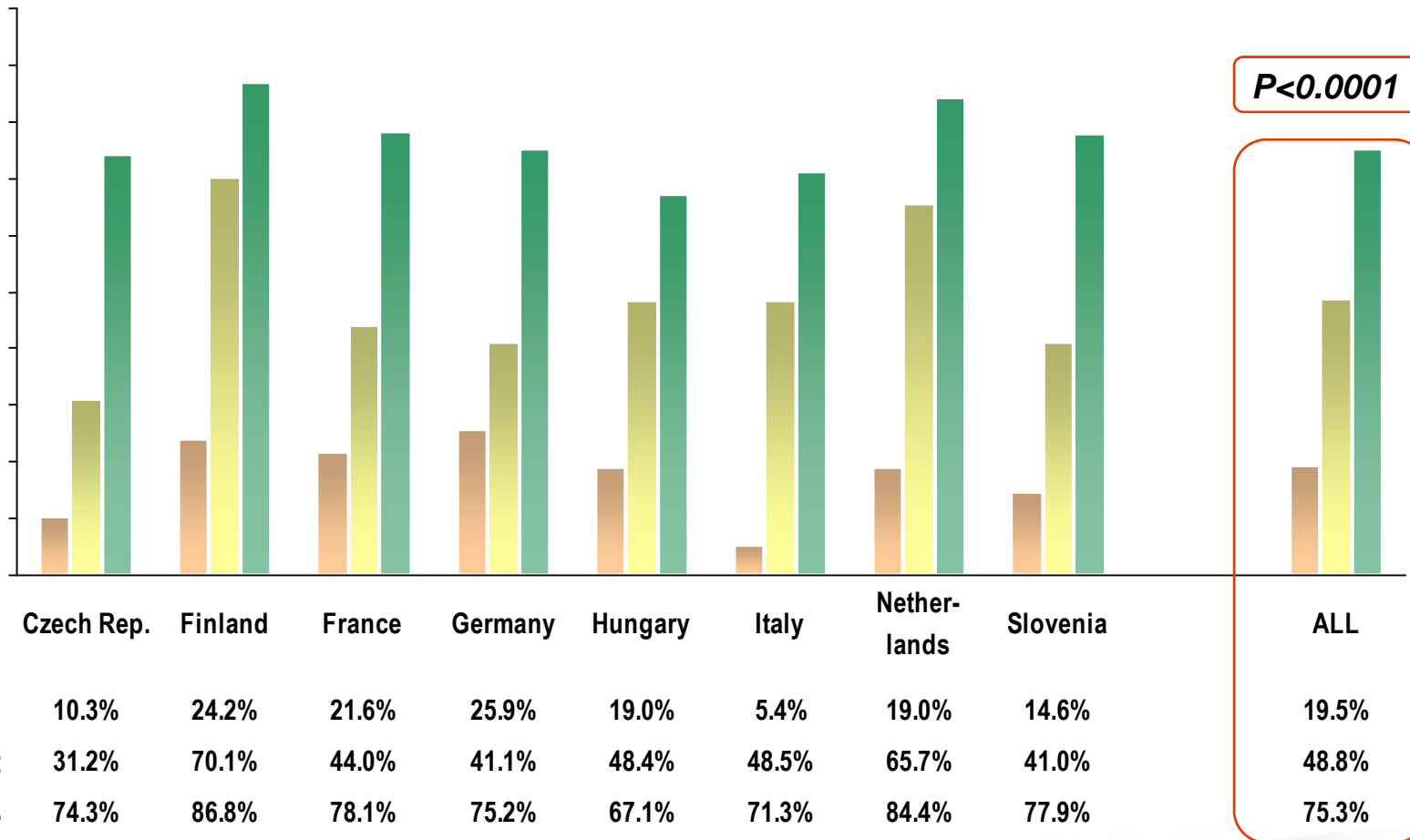
S2 vs. S1 : $P=0.001$
S3 vs. S2 : $P<0.0001$
S3 vs. S1 : $P<0.0001$



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Therapeutic Control of Total Cholesterol (1)*



* Total cholesterol < 5.0 mmol/L

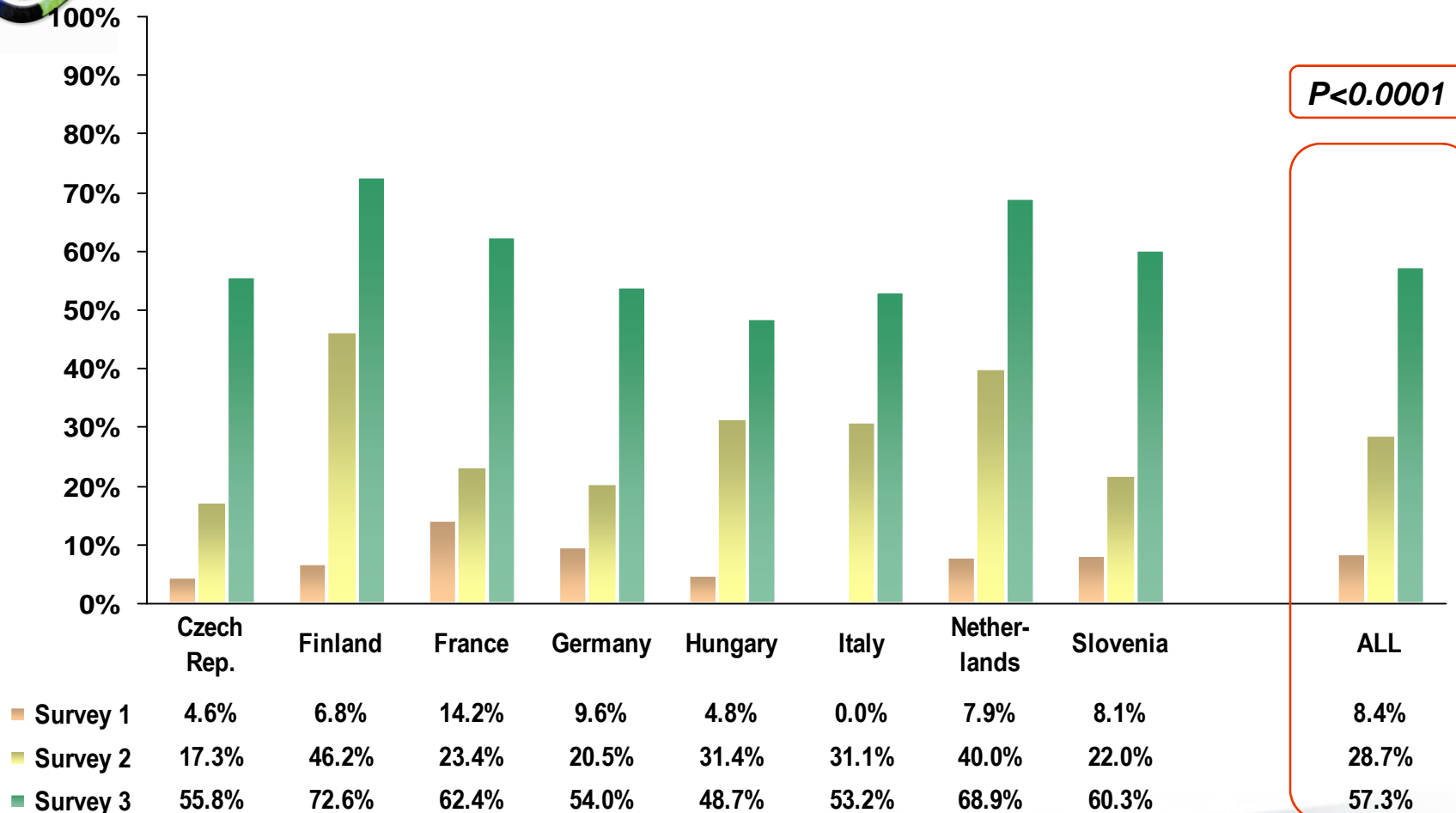
S2 vs. S1 : P<0.0001

S3 vs. S2 : P<0.0001

S3 vs. S1 : P<0.0001



Therapeutic Control of Total Cholesterol (2)*



* Total cholesterol < 4.5 mmol/L

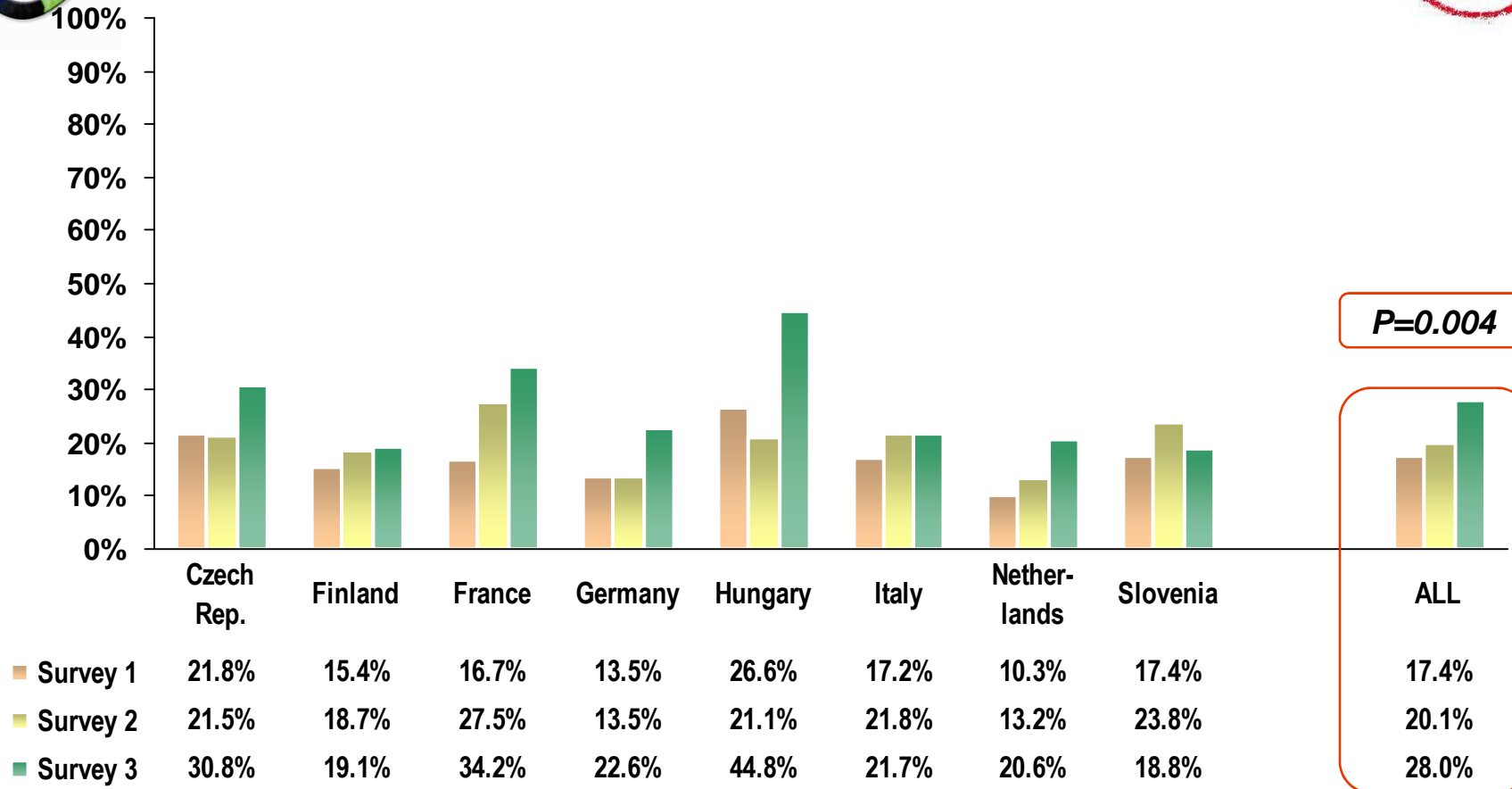
S2 vs. S1 : P<0.0001
 S3 vs. S2 : P<0.0001
 S3 vs. S1 : P<0.0001



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Prevalence of Diabetes*



* Self-reported history of diagnosed diabetes

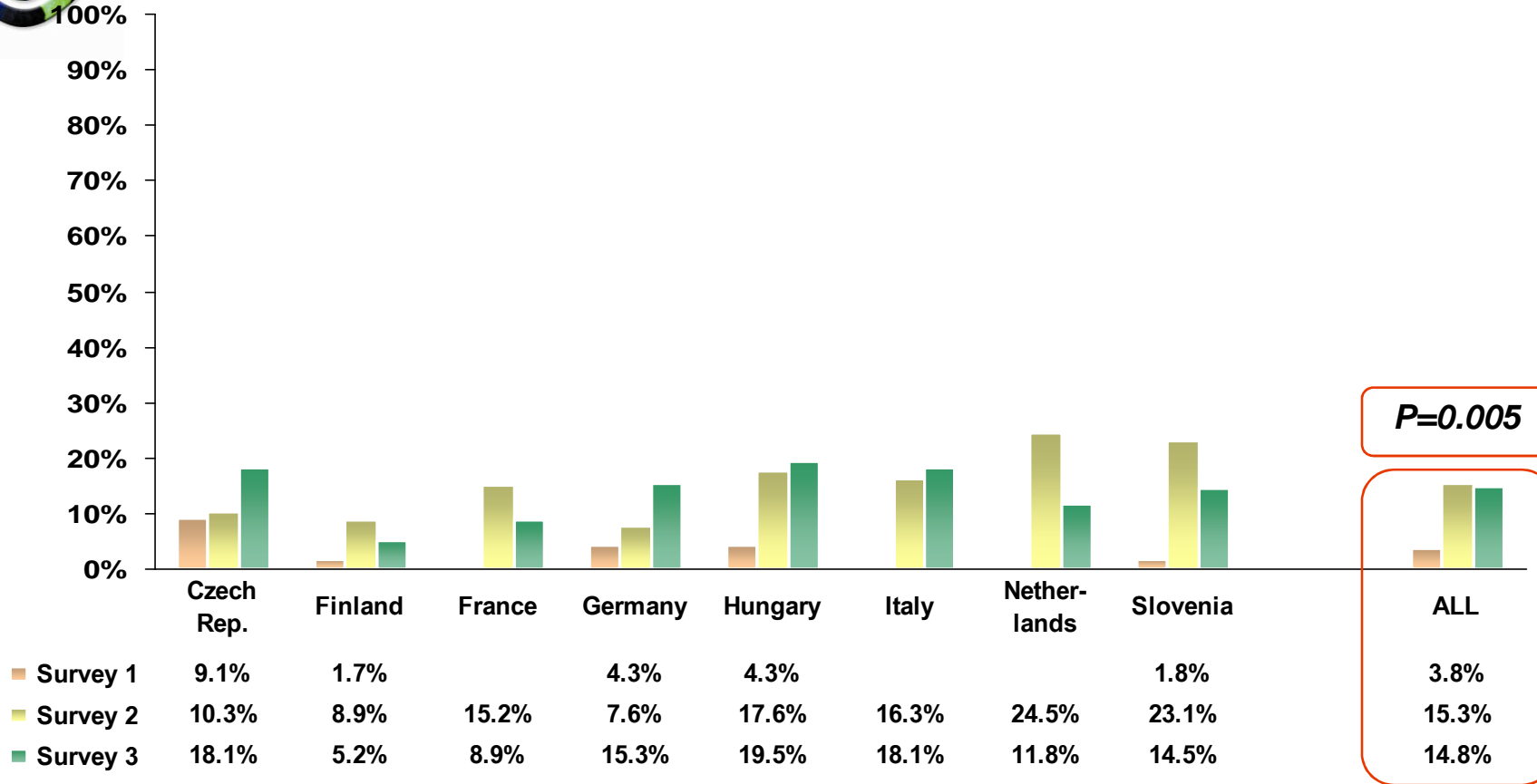
S2 vs. S1 : P=0.21

S3 vs. S2 : P=0.02

S3 vs. S1 : P=0.001



Prevalence of Undiagnosed Diabetes*



* Glucose \geq 7 mmol/L for patients fasting for at least 6 hours

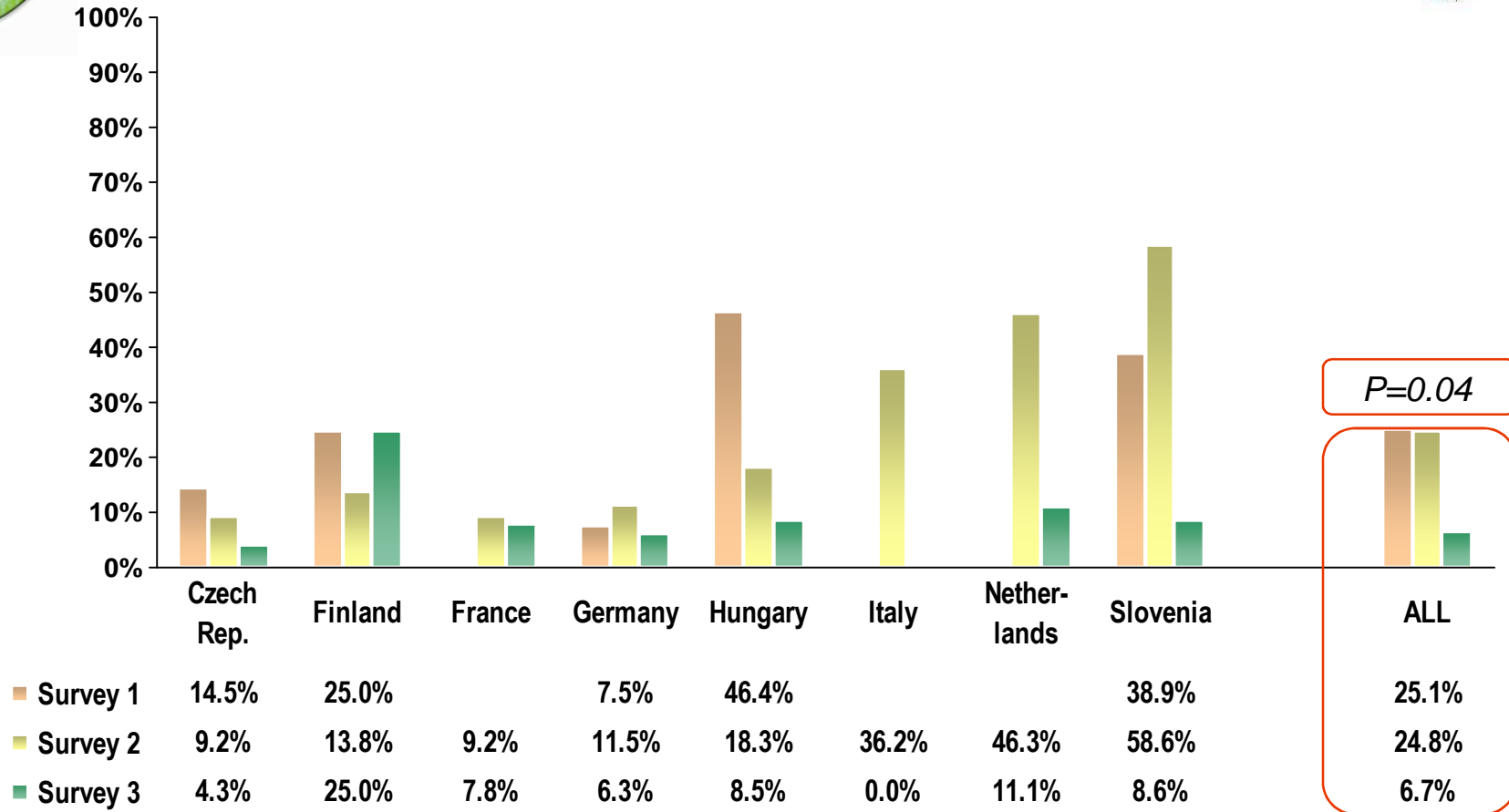
S2 vs. S1 : P=0.002

S3 vs. S2 : P=0.62

S3 vs. S1 : P=0.006



Therapeutic Control of Diabetes*



* Fasting glucose < 6.1 mmol/L in patients reporting a positive history of diagnosed diabetes

S2 vs. S1 : P=0.90

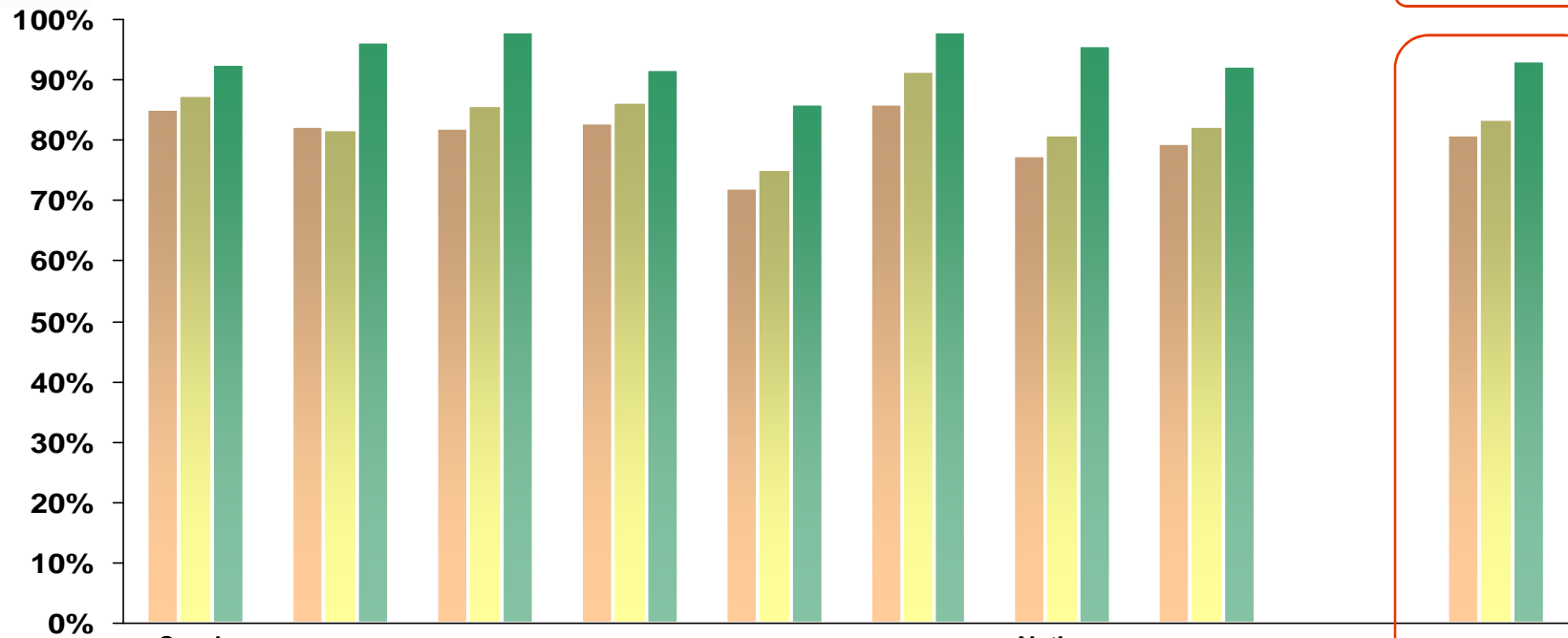
S3 vs. S2 : P=0.03

S3 vs. S1 : P=0.04



Medication Use: Antiplatelets

$P < 0.0001$



	Czech Rep.	Finland	France	Germany	Hungary	Italy	Netherlands	Slovenia	ALL
Survey 1	85.2%	82.2%	82.1%	82.9%	72.0%	86.1%	77.5%	79.4%	80.8%
Survey 2	87.6%	81.9%	85.7%	86.3%	75.1%	91.5%	81.0%	82.3%	83.6%
Survey 3	92.5%	96.4%	98.1%	91.8%	86.1%	98.0%	95.7%	92.4%	93.2%

S2 vs. S1 : $P=0.29$
 S3 vs. S2 : $P=0.0002$
 S3 vs. S1 : $P<0.0001$

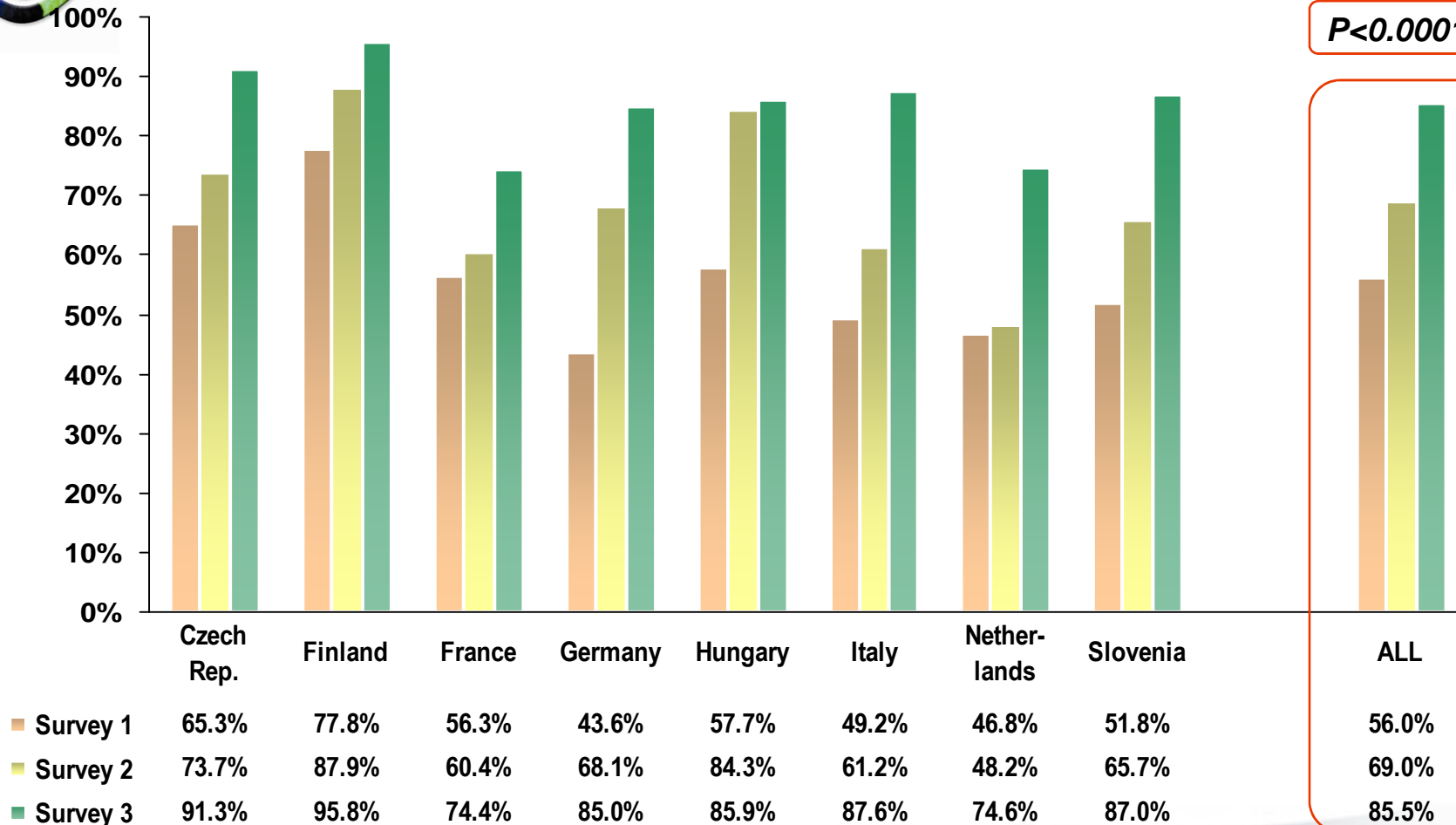




Medication Use: Beta-Blockers



$P < 0.0001$



S2 vs. S1 : $P=0.001$

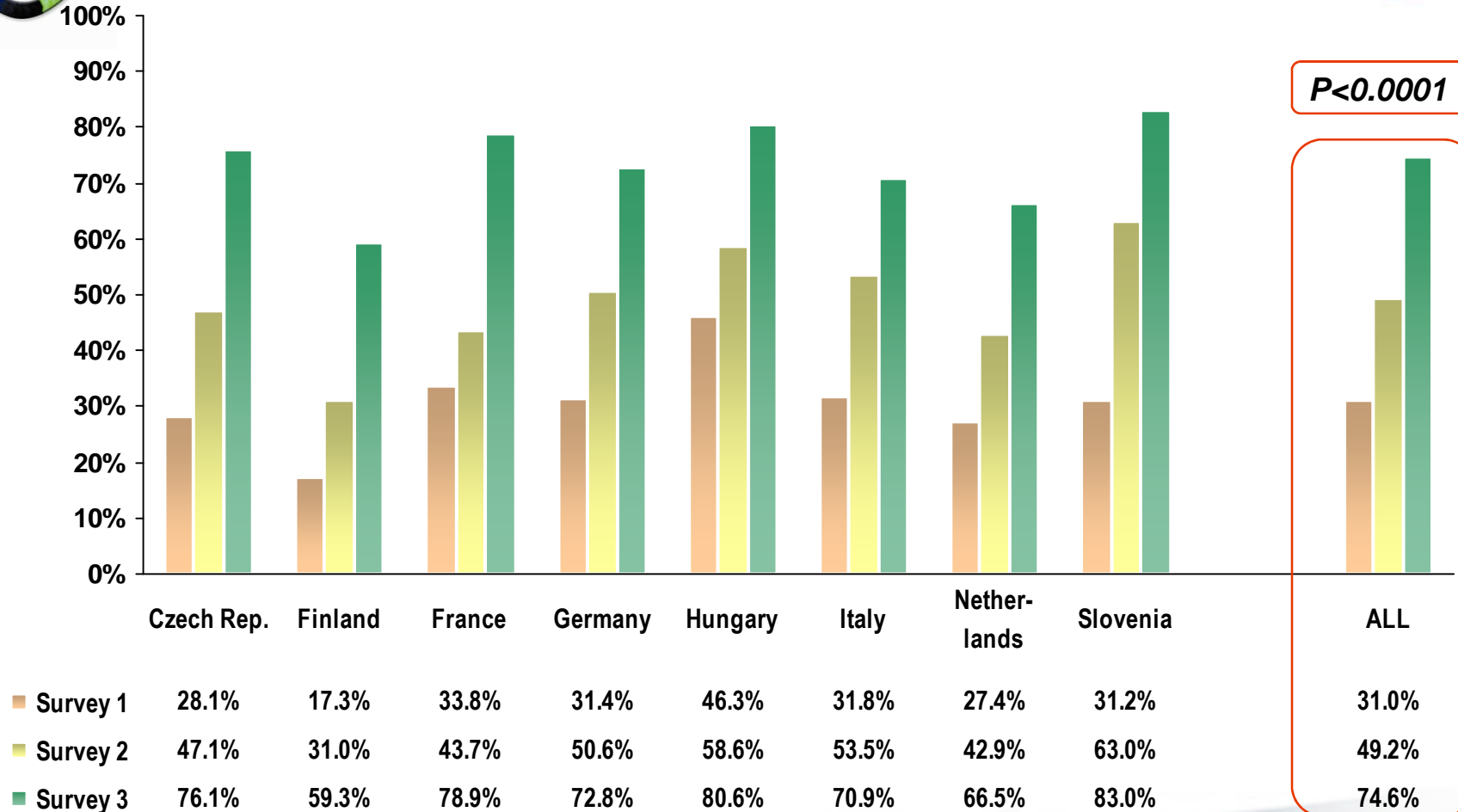
S3 vs. S2 : $P=0.0002$

S3 vs. S1 : $P < 0.0001$





Medication Use: ACE Inhibitors & Angiotensin II RA



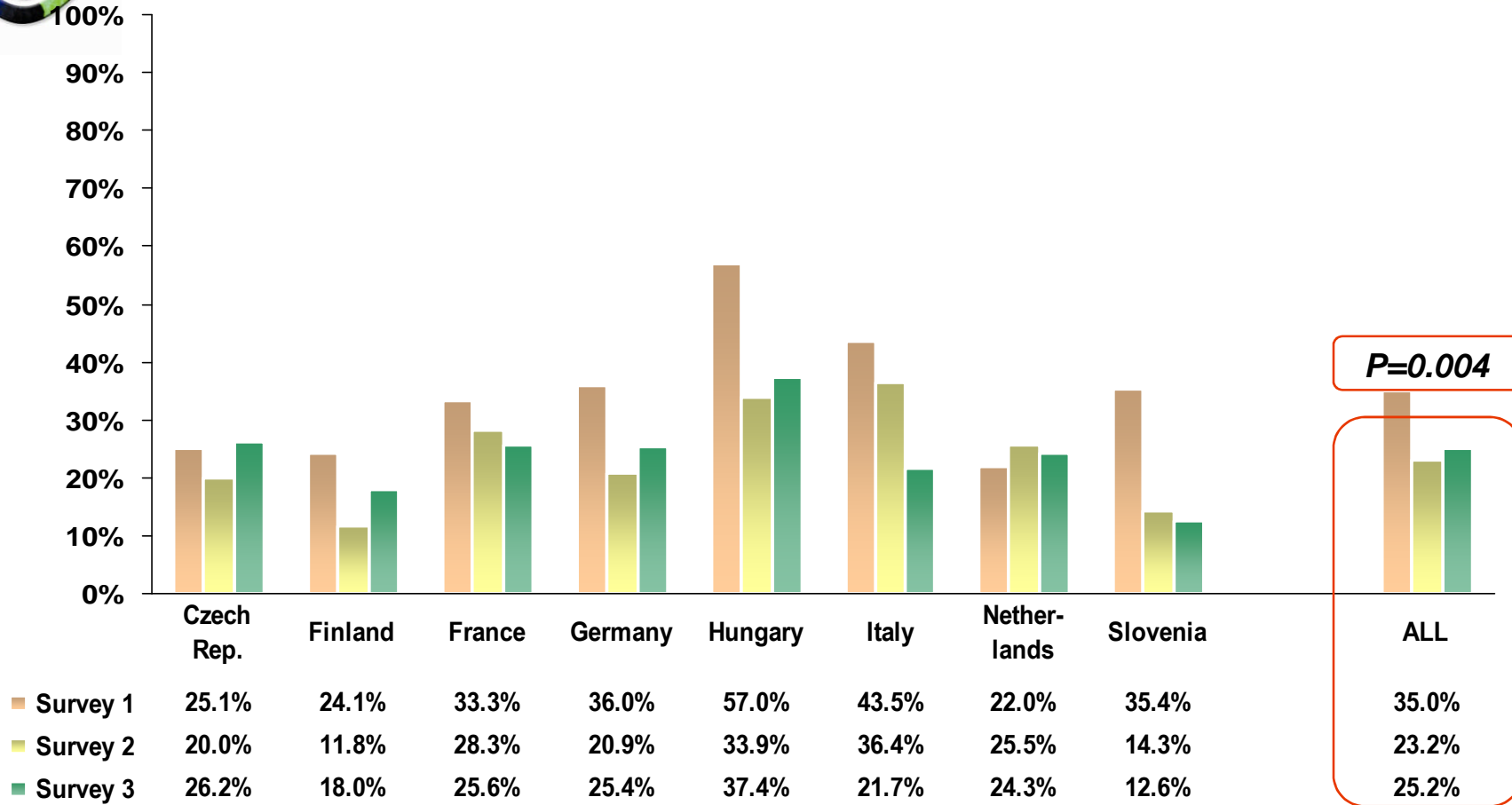
S2 vs. S1 : P<0.0001

S3 vs. S2 : P<0.0001

S3 vs. S1 : P<0.0001



Medication Use: Calcium Antagonists



S2 vs. S1 : P=0.004

S3 vs. S2 : P=0.83

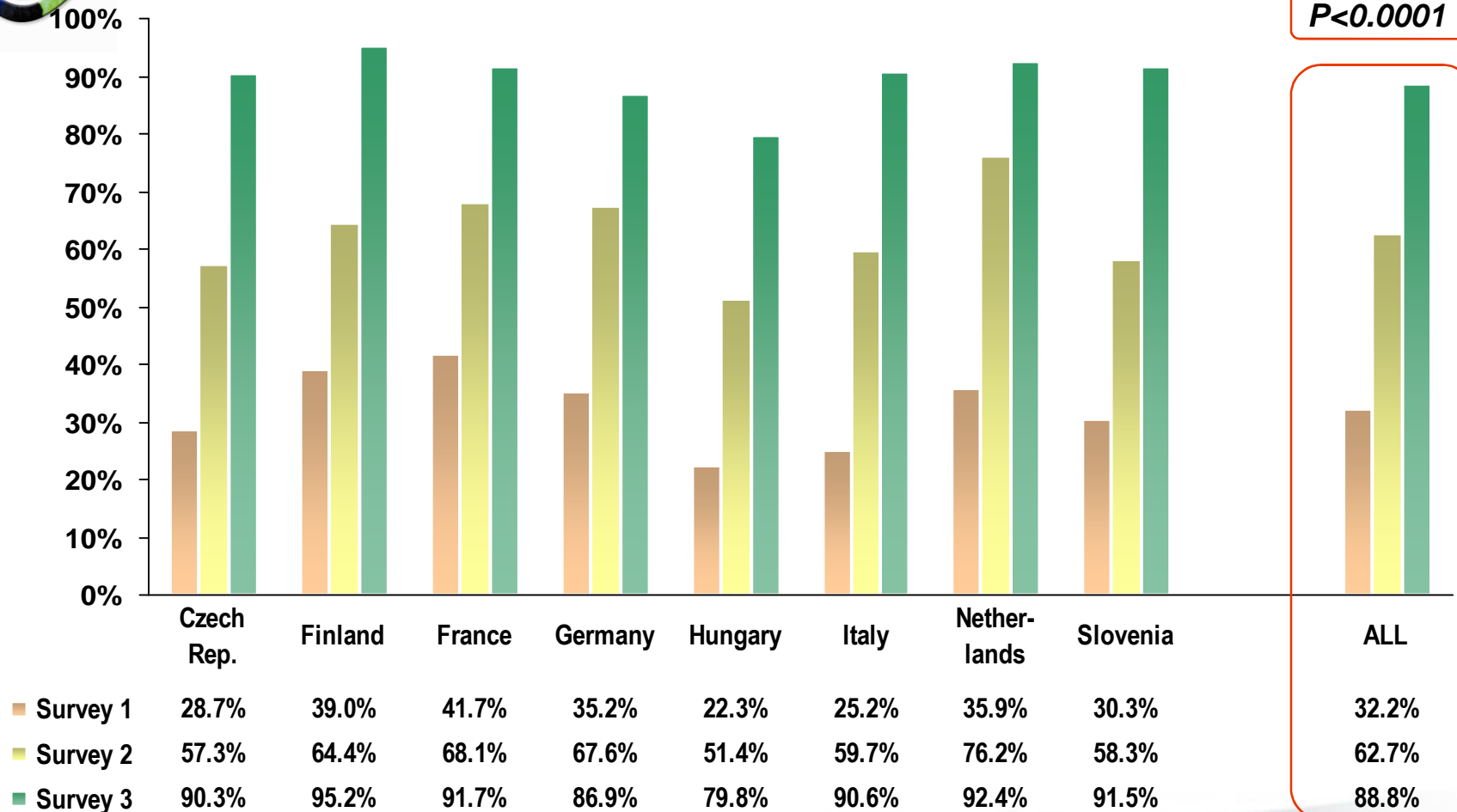
S3 vs. S1 : P=0.003



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Medication Use: Lipid Lowering Drugs



S2 vs. S1 : $P < 0.0001$
S3 vs. S2 : $P < 0.0001$
S3 vs. S1 : $P < 0.0001$

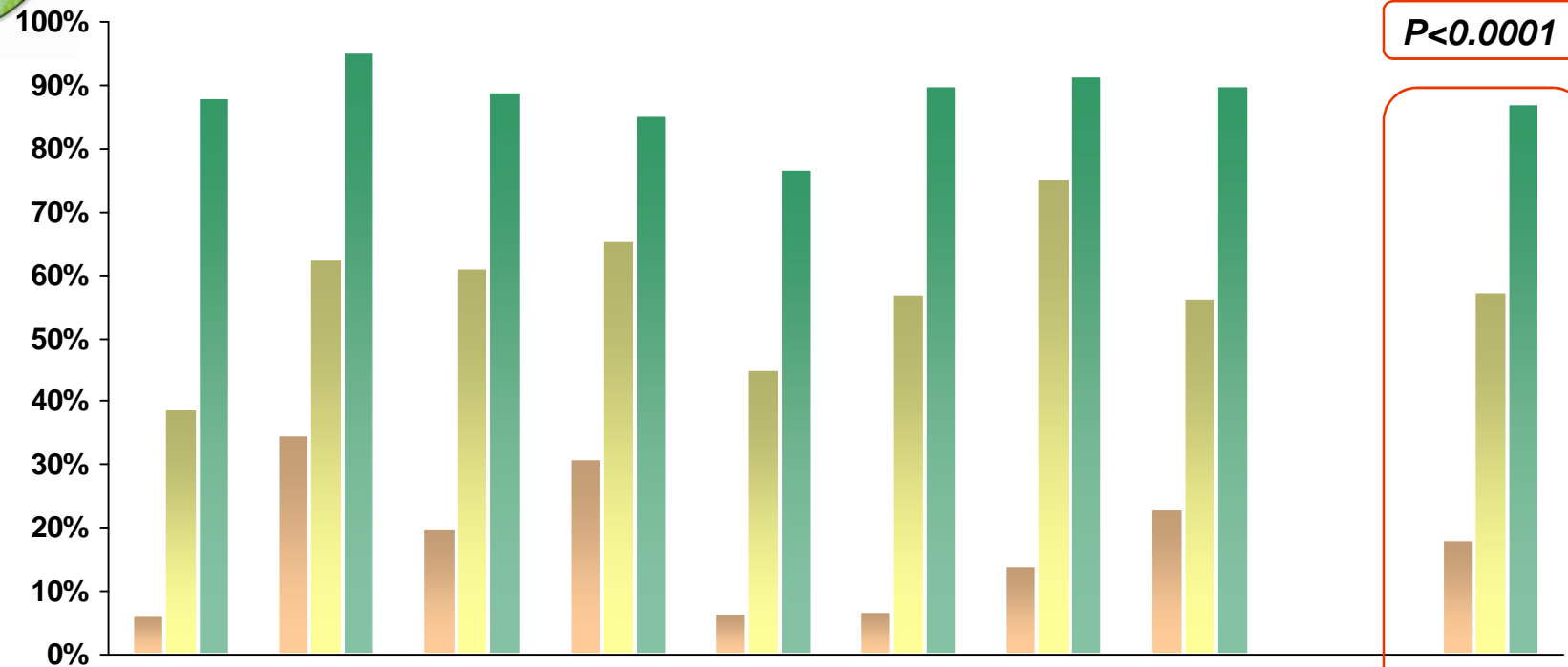
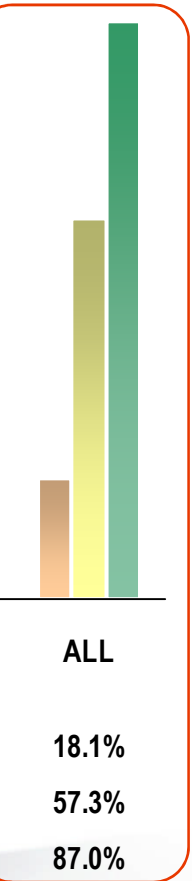


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Medication Use: Statins

P<0.0001



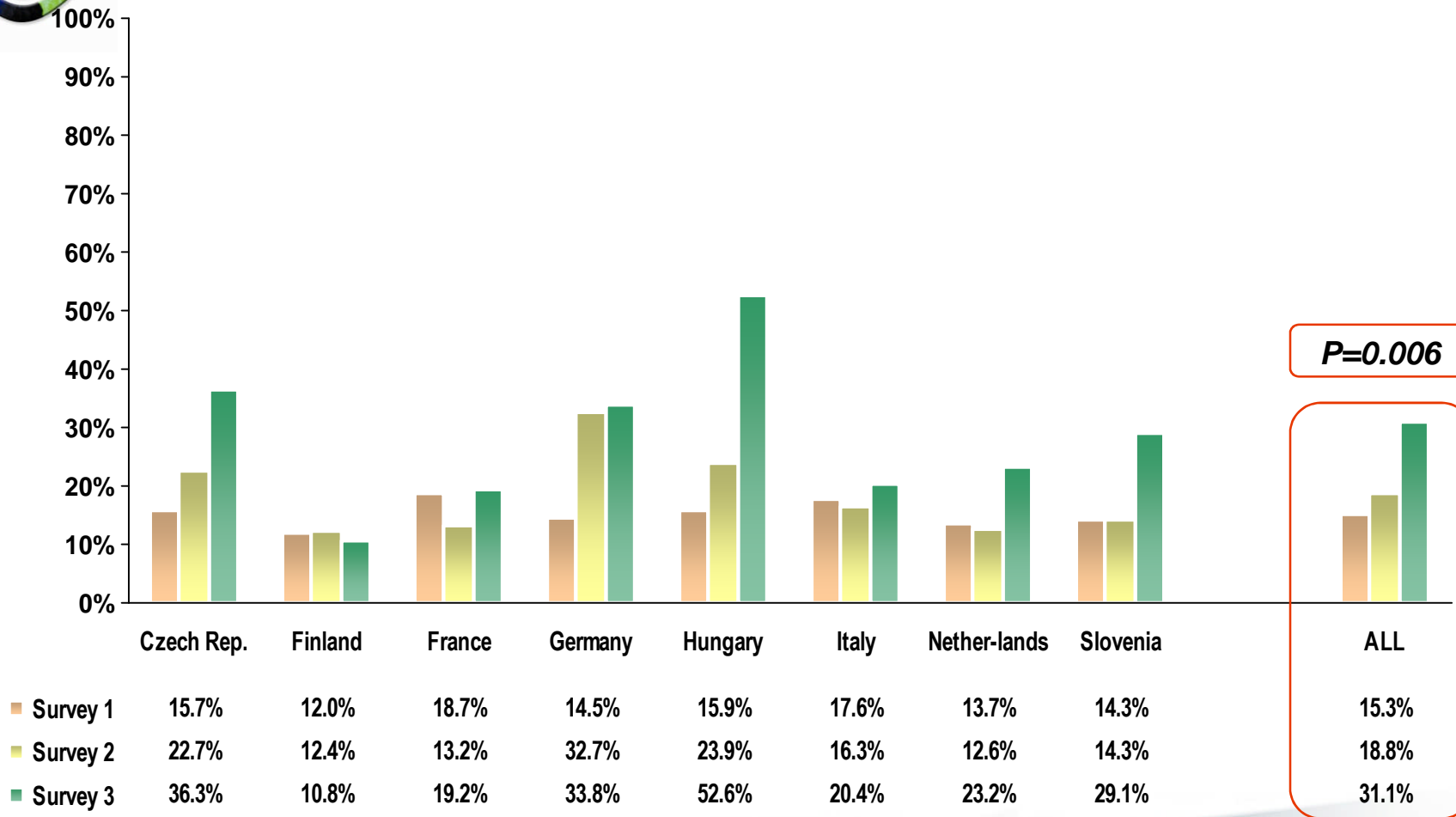
	Czech Rep.	Finland	France	Germany	Hungary	Italy	Netherlands	Slovenia	ALL
Survey 1	6.3%	34.9%	20.2%	31.1%	6.7%	6.8%	14.0%	23.2%	18.1%
Survey 2	38.8%	62.6%	61.0%	65.6%	45.2%	57.0%	75.1%	56.3%	57.3%
Survey 3	88.1%	95.2%	89.1%	85.4%	76.7%	90.0%	91.4%	90.1%	87.0%

S2 vs. S1 : P<0.0001
 S3 vs. S2 : P<0.0001
 S3 vs. S1 : P<0.0001





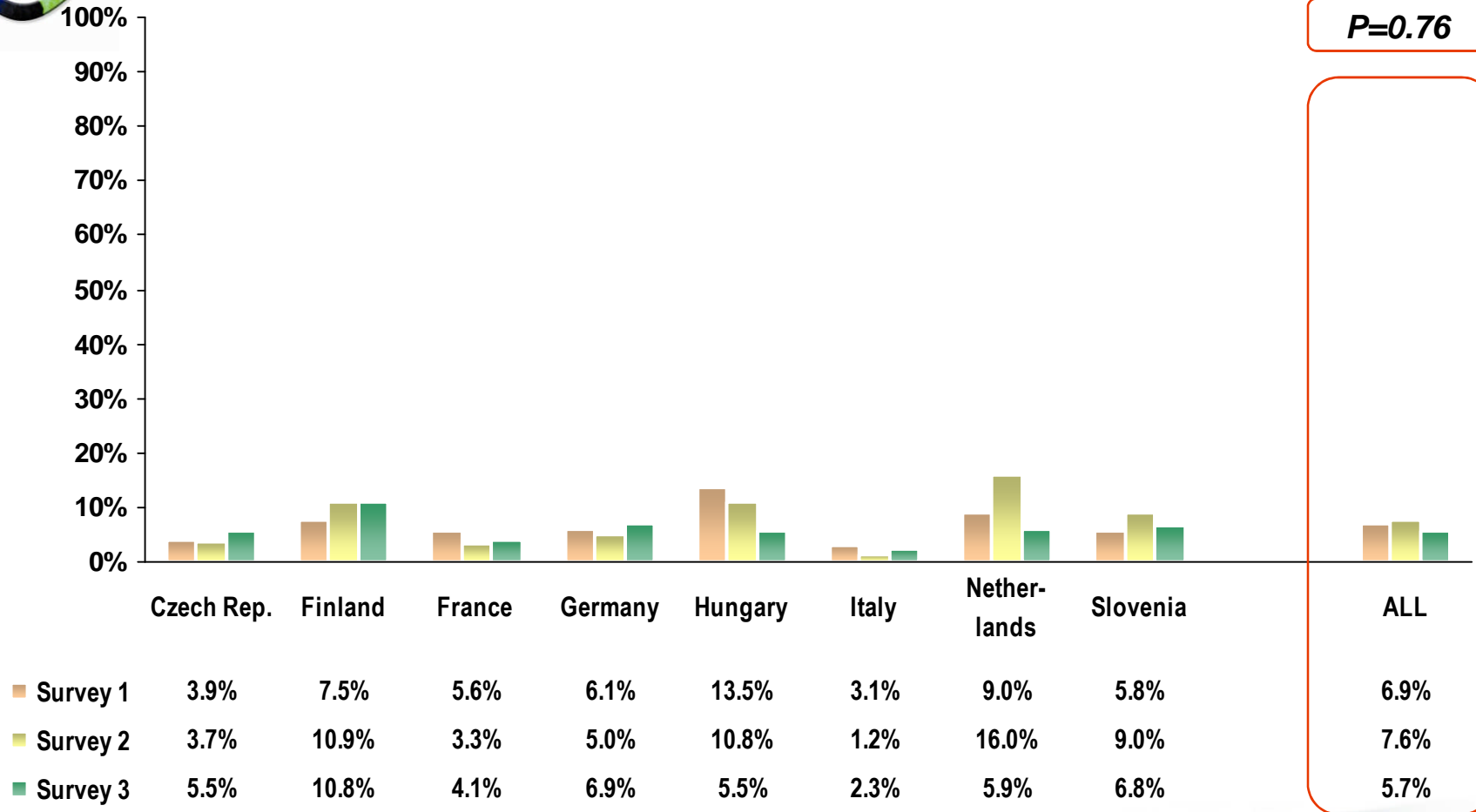
Medication Use: Diuretics



S2 vs. S1 : P=0.30
 S3 vs. S2 : P=0.02
 S3 vs. S1 : P=0.002



Medication Use: Anticoagulants



S2 vs. S1 : P=0.83

S3 vs. S2 : P=0.48

S3 vs. S1 : P=0.62



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Conclusions

No change in prevalence of smoking and continuing adverse trends in prevalence of obesity and central obesity





Conclusions

No change in blood pressure control despite increased use of anti-hypertensive medications

***61% above therapeutic target
(BP < 140/90 mmHg)***

Continuing improvement in lipid control with increased use of statins

42% above the 2003 therapeutic target (TC < 4.5 mmol/l)



Conclusions

Increasing prevalence of diabetes, both self reported and undetected, and deteriorating therapeutic control

[93%] above the therapeutic target of < 6.1 mmol/l

Increased use of anti-platelets, beta- blockers, ACE/ARB's, statins and diuretics with a lower use of CCB's.



Conclusions

Only 31% of coronary patients accessed cardiovascular prevention and rehabilitation programmes in the EUROASPIRE III survey

Professional comprehensive multidisciplinary ambulatory preventive cardiology programmes should be available for all coronary patients
“Prevention Centres”



Acknowledgements

Management Committee
Coordinating Centre
Statistical Centre
Laboratory Centre
National Coordinators