WARSZAWSKI
UNIWERSYTET
MEDYCZNY

The paediatric patient in the family doctor’s practice

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Schedule

- GP (POZ) childcare up to the age of 18
- child health check-up
- vaccinations
- Sport activities and prophylaxis
- Frequent problems reported by patients
- rhinitis, cough and upper respiratory tract infections
- lower respiratory tract infections
- no increase in weight
- iron deficiency/anemia (in infants)
- **abdominal pain, diarrhoea, vomiting**
- **allergies**
- **skin changes**
- urinary tract infections
- injuries and fractures

Child health check-up in Poland

- Patronage appointment -1-4 week of life
- Appointment - 6-9 week of life (+vaccination)
- Appointment 3-4 month of life (+vaccination)
- Appointment 6 month of life (+vaccination)
- Appointment 9 month of life
- Appointment 12 month of life
- Appointment 2 y.o.
- Appointment 4 y.o.
- Appointment 5 y.o.
- Appointment 8-9 y.o.
- Appointment 12-13 y.o.
- Appointment 15-16 y.o.
- Appointment 18-19 y.o. (transition)

Child health book in Poland

Table of contents

Child health book in Poland

Labour

IV. PORÓD

1. Miejsce urodzenia: szpital ☐ dom ☐ inne ☐☐
2. Oznaczenie podmiotu wykonującego działalność leczniczą……
   ……
   ……
3. Ukończony tydzień ciąży ……
4. Poród: spontaniczny ☐ indukowany ☐☐

   pojedynczy ☐ mnogi ☐☐ dziecko, które z kolei……

   siłami natury ☐

   zabiegowy: kleszcze ☐ vacuum ☐ pomoc ręczna ☐☐

   operacyjny (cięcie cesarskie): nagłe ☐ elektywne ☐
5. Wskazania do porodu zabiegowego albo operacyjnego:

   nieprawidłowe położenie/ułożenie płodu ☐ nieprawidłowa czynność skurczowa macicy ☐ stan septyczny ☐ krwawienie w I okresie ☐☐

   inne……
   ……
6. Objawy zagrożenia płodu……
   ……
7. Czas trwania I okresu…… czas trwania II okresu……
8. Płyn owodniowy: przejrzysty ☐ mętny ☐ zielony ☐ żółty ☐ krwisty ☐ cuchnący ☐ brak ☐

   odpłynął: w czasie porodu ☐ …… godzin przed porodem
9. Sposób łagodzenia bólu porodowego……
   ……
10. Leki stosowane w czasie porodu……
11. Pobrano krew pępowinową: tak ☐ nie ☐
12. Uwagi……
    ……
    ……

Data……

Oznaczenie osoby sprawującej opiekę

……

V. STAN NOWORODKA PO URODZENIU

1. Urodzeniowa masa ciała ……g (zaznaczyć na siatce centylowej)
2. Długość ciała ……cm
3. Obwód głowy ……cm (zaznaczyć na siatce centylowej)
4. Obwód klatki piersiowej ……cm
5. Ocena wg skali Apgar:

Minuta życia:	1.	3.	5.	10.	(odchylenia w badaniu):
Czynność serca					
Oddech					
Napięcie mięśni					
Odruchy					
Zabarwienie skóry					
RAZEM pkt.					

6. Postępowanie z noworodkiem po urodzeniu:

   odśluzowanie ☐

   osuszenie ☐

   zaopatrzenie pępowiny ☐

   profilaktyka zakażenia przedniego odcinka oka ☐

   podanie witaminy K ☐

   podanie tlenu ☐☐ od…… do …… min.

   sztuczna wentylacja ☐☐ od…… do …… min.

   intubacja ☐☐ w …… min.

   masaż serca ☐ od…… do …… min.

   cewnikowanie naczyń pępowinowych ☐
7. Krew pępowinowa (tętnica, żyła): pH ……BE ……inne……
8. Saturacja (mierzona na prawej kończynie górnej, między 2. a 24. godz. życia)……
9. Echo serca (gdy saturacja poniżej 96%) ……
10. Leki……
    ……
11. Kontakt noworodka z matką „skóra do skóry": tak ☐ nie ☐
    Czas trwania……, jeżeli krócej niż 2 godziny powód przerwania:……
    ……
12. Czy dziecko zaczęło ssać pierś: tak ☐ nie ☐☐

Data……

Oznaczenie osoby sprawującej opiekę

……

Condition of the newborn at birth

Child health book in Poland

Vaccinations

WZÓR

Objaśnienie: Książeczka szczepień ma format A5 i stanowi odrębną część włączoną do książeczki zdrowia.

Książeczka szczepień

Nazwisko i imię, nr PESEL lub nr dokumentu tożsamości– w przypadku osób nieposiadających nr PESEL	nazwisko ..... imię .... nr PESEL	Data urodzenia dzień miesiąc rok .....-.....-.....

Obowiązkowe szczepienia ochronne

Wiek	Rodzaj szczepionki	Data i godzina wykonania szczepienia	Nazwa szczepionki	Nr serii szczepionki	Podpis osoby wykonującej szczepienie
noworodek	gruźlica BCG				
	wzw B – 1. dawka				
2 miesiąc życia	wzw B – 2. dawka				
	DTP – 1. dawka				
	Hib – 1. dawka				
3–4 miesiąc życia	DTP – 2. dawka				
	Hib – 2. dawka				
	polio IPV – 1. dawka				
5–6 miesiąc życia	DTP – 3. dawka				
	Hib – 3. dawka				
	polio IPV – 2. dawka				
7 miesiąc życia	wzw B – 3. dawka				
13–14 miesiąc życia	odra, świnka, różyczka – 1. dawka				
16–18 miesiąc życia	DTP – 4. dawka				
	polio IPV – 3. dawka				
	Hib – 4. dawka				
6 rok życia	DTaP – 1. dawka przypominająca				
	polio OPV				
10 rok życia	odra, świnka, różyczka – 2. dawka przypominająca				
14 rok życia	Td – 2. dawka przypominająca				
19 rok życia	Td – 3. dawka przypominająca				

Pieczęć zakładającego książeczkę nr kontraktu	Pieczęć przeprowadzającego szczepienie nr kontraktu	Pieczęć przeprowadzającego szczepienie nr kontraktu	Pieczęć przeprowadzającego szczepienie nr kontraktu
od ..... do	od ..... do	od ..... do	od ..... do .....

Nazwisko i imię osoby, która sprawuje prawną pieczę nad osobą objętą obowiązkowym szczepieniem ochronnym, albo opiekuna faktycznego w rozumieniu art. 3 ust. 1 pkt 1 ustawy z dnia 6 listopada 2008 r. o prawach pacjenta i Rzeczniku Praw Pacjenta (Dz. U. z 2009 r. Nr 52, poz. 417, z późn. zm.)

Nazwisko ..... imię .....

Nr telefonu

Adres zamieszkania

kod pocztowy miejscowość ulica nr domu nr lokalu

1. ..... kod pocztowy miejscowość ulica nr domu nr lokalu
2. ..... kod pocztowy miejscowość ulica nr domu nr lokalu
3. .....

Inne szczepienia ochronne

Typ szczepienia/szczepienie przeciw	Nazwa szczepionki	Nr serii szczepionki	Podpis wykonującego

Przeciwwskazania do przeprowadzenia szczepień ochronnych

Szczepienie przeciw	Data stwierdzenia	Data ustania	Rodzaj przeciwwskazania	Podpis lekarza kwalifikującego

Niepożądane odczyny poszczepienne

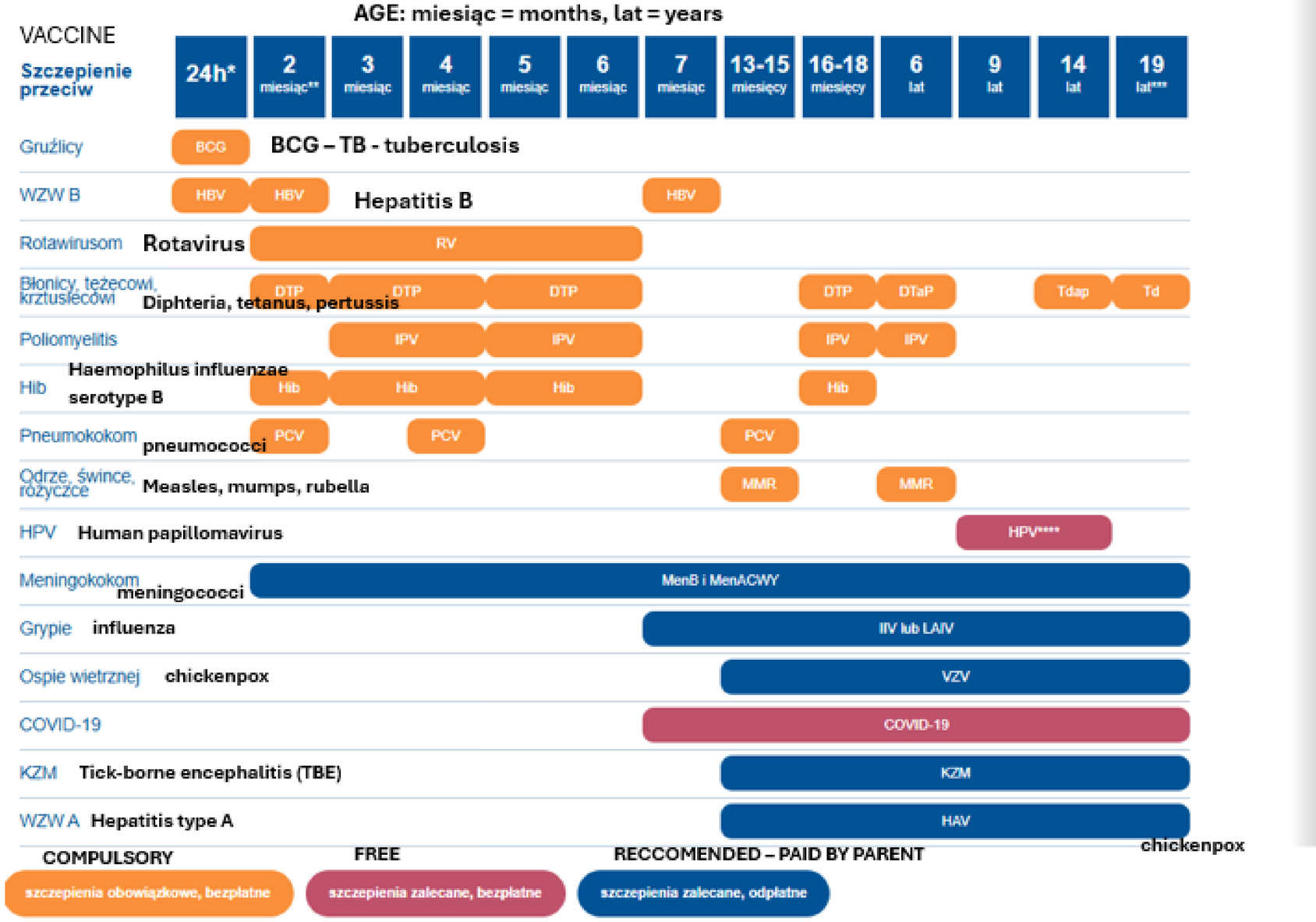
Rodzaj odczynu	Data wystąpienia	Po jakiej szczepionce		Rodzaj odczynu	Data wystąpienia	Po jakiej szczepionce	
		nazwa	data szczepienia			nazwa	data szczepienia

Termin kolejnego szczepienia

Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia	Data kolejnego szczepienia

KALENDARZ SZCZEPIEŃ DZIECI I MŁODZIEŻY NA 2025 ROK

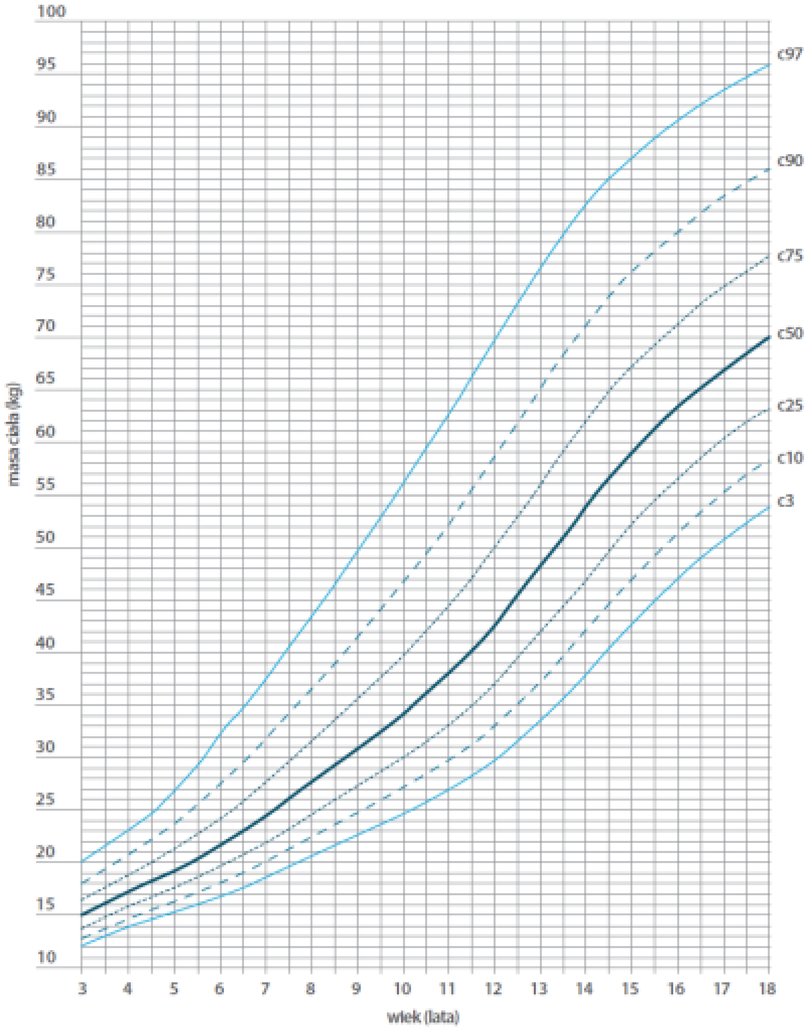
szczepienia info



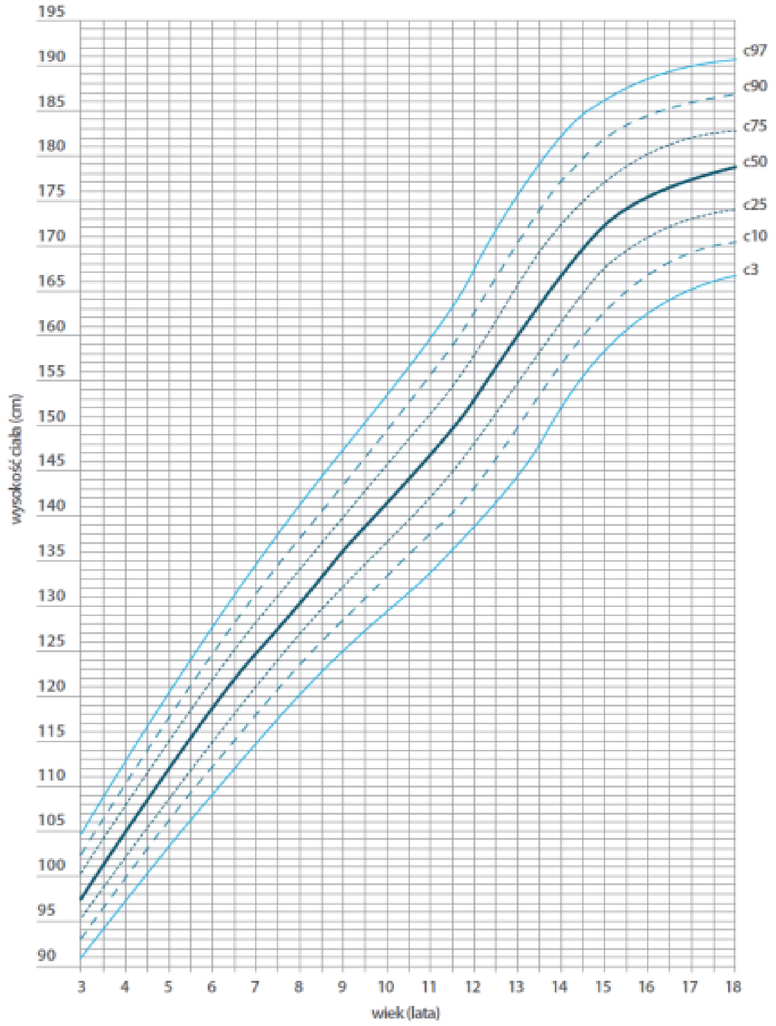
Mandatory immunizations for children in Poland for 2025

Child health book in Poland

Siatka centylowa masy ciała chłopców w wieku 3-18 lat



Siatka centylowa wysokości ciała chłopców w wieku 3-18 lat



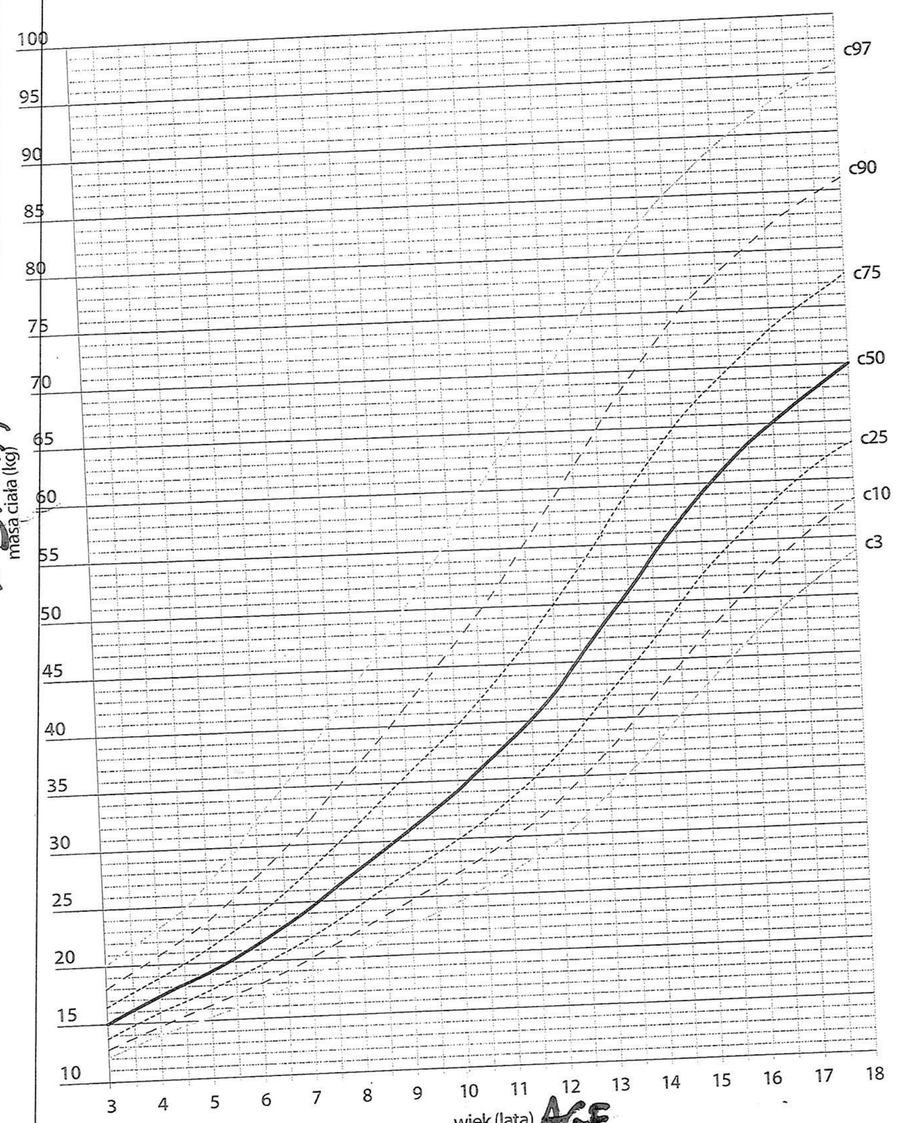
Source: Z. Kułaga, M. Litwin, A. Grajda, B. Gurzkowska, A. Świąder-Leśniak, A. RóżdżyńskaŚwiątkowka, M. Góźdź, M. Wojtyło i zespoły badawcze projektów OLAF i OLA, Normy rozwojowe
wysokości i masy ciała, wskaźnika masy ciała, obwodu talii i ciśnienia tętniczego dzieci i młodzieży w
wieku 0-18 lat, „Standardy Medyczne Pediatria", Warszawa 2015, nr 1, tom 12, Suplement 1.

TASK

Find percentiles for weight, height, BMI and BP percentile on the centile grid for:

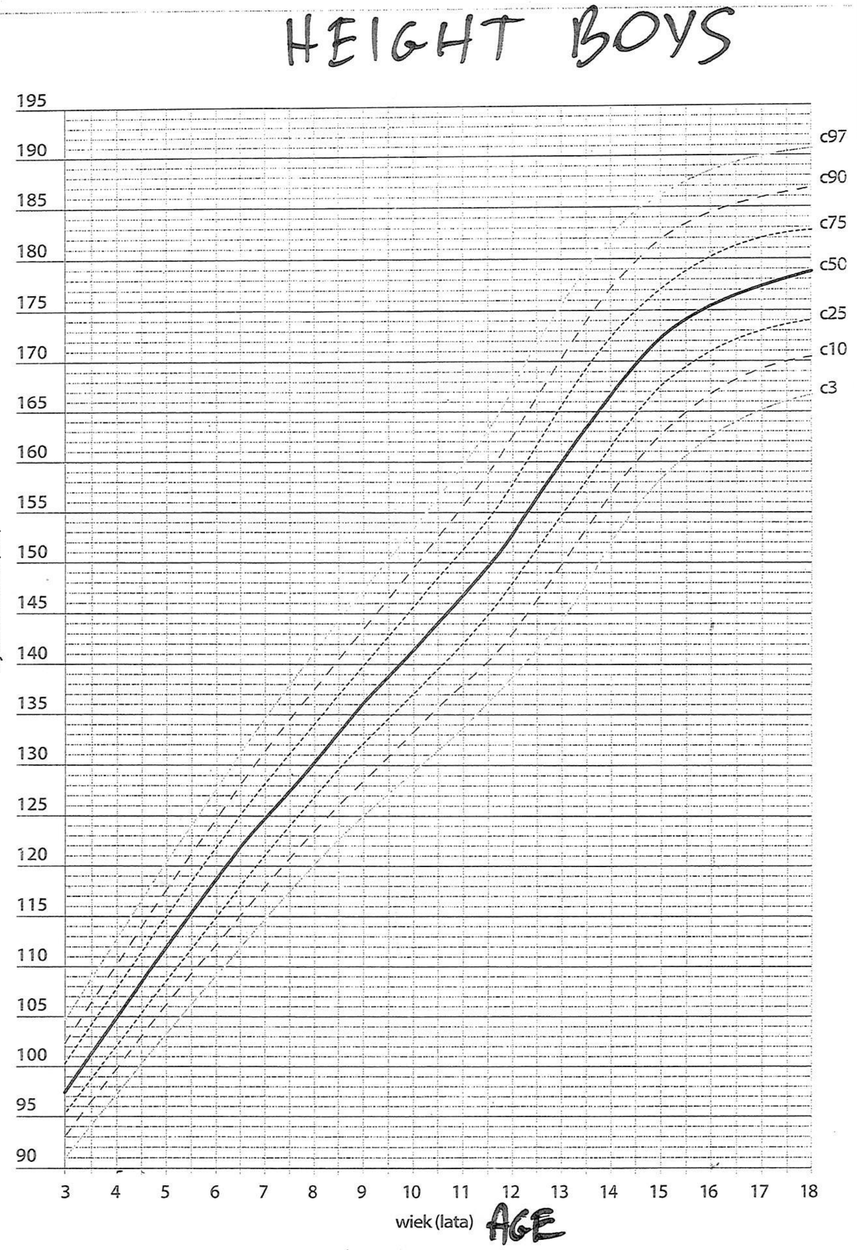
A) a 13-year-old boy weighing 40 kg and 155 cm tall, with a measured blood pressure of 126/83 mmHg
B) a 5-year-old girl weighing 23 kg and 101 cm tall with a blood pressure measurement of 117/65 mmHg

A) 10-25c,25c, 5-85c, 90-95c/>99c
B) 75-90c, <3c, >97c ~ >99c/50-90c or ~ >99c/90c



WEIGHT BOYS

RYC. 10 Siatka centylowa masy ciała chłopców

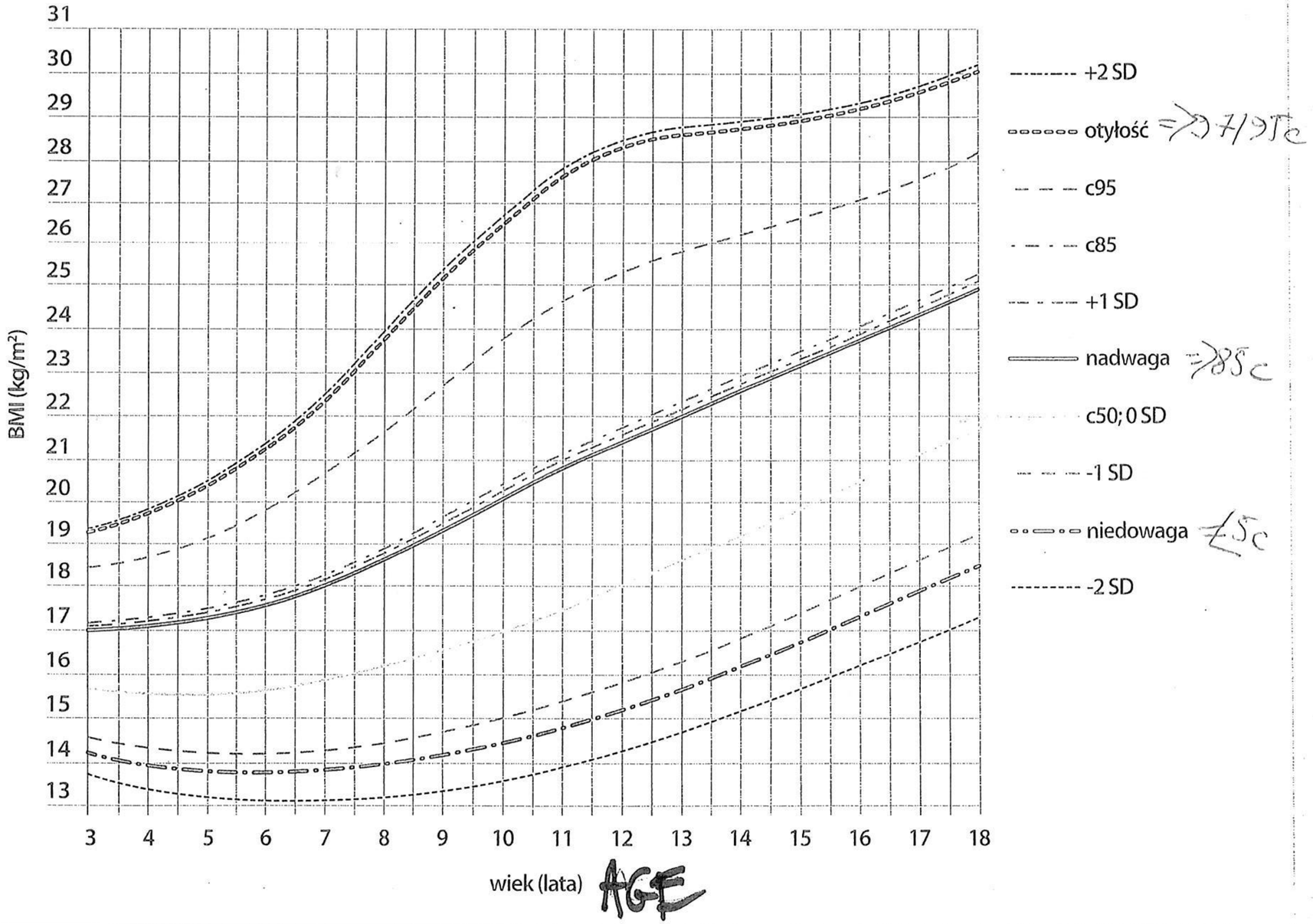


RYC. 9 Siatka centylowa wysokości ciała chłopców (wg OLA+OLAF)

HEIGHT BOYS

STANDARDY MEDYCZNE

Source: Z. Kułaga, et al „Standardy Medyczne Pediatria", Warszawa 2015



Source: Z. Kułaga, et al „Standardy Medyczne Pediatria", Warszawa 2015

Rozkład odchyleń standardowych (SD) BMI; centyle 85 i 95 oraz granice niedowagi, nadwagi i otyłości u chłopców

BP Boys

Wiek	Centyl BP	SBP 3	SBP 10	SBP 25	SBP 50	SBP 75	SBP 90	SBP 97	DBP 3	DBP 10	DBP 25	DBP 50	DBP 75	DBP 90	DBP 97
		Centyle wysokości ciała							Centyle wysokości ciała						
3	wysokość (cm)→	93,9	96,3	98,7	101,3	104,0	106,3	108,7	93,9	96,3	98,7	101,3	104,0	106,3	108,7
	50	90	90	91	91	92	93	93	54	55	55	55	55	56	56
	90	100	101	101	102	102	103	103	63	63	63	64	64	64	64
	95	103	103	104	105	105	106	106	66	66	66	66	67	67	67
	99	108	109	109	110	111	112	112	70	70	71	71	72	72	72
	99+5 mmHg	113	114	114	115	116	117	117	75	75	76	76	77	77	77
4	wysokość (cm)→	100,3	102,9	105,5	108,4	111,3	113,9	116,5	100,3	102,9	105,5	108,4	111,3	113,9	116,5
	50	92	93	93	94	95	96	96	55	56	56	56	56	57	57
	90	103	103	104	104	105	105	106	64	64	64	65	65	65	66
	95	105	106	107	107	108	109	109	67	67	67	68	68	68	68
	99	111	112	112	113	114	115	116	71	72	72	72	73	73	74
	99+5 mmHg	116	117	117	118	119	120	121	76	77	77	77	78	78	79
5	wysokość (cm)→	106,2	109,0	111,9	115,2	118,4	121,3	124,1	106,2	109,0	111,9	115,2	118,4	121,3	124,1
	50	94	95	95	96	97	98	98	56	56	57	57	57	58	58
	90	105	106	106	107	108	108	109	65	65	66	66	66	67	67
	95	108	109	109	110	111	112	112	68	68	68	69	69	69	70
	99	114	115	115	116	117	118	119	72	73	73	74	74	75	75
	99+5 mmHg	119	120	120	121	122	123	124	77	78	78	79	79	80	80
6	wysokość (cm)→	111,9	114,9	118,0	121,5	125,0	128,1	131,2	111,9	114,9	118,0	121,5	125,0	128,1	131,2
	50	96	97	97	98	99	100	101	57	57	58	58	58	59	59
	90	107	108	109	109	110	111	111	66	66	67	67	67	68	68
	95	110	111	112	113	114	114	115	69	69	69	70	70	70	71
	99	117	117	118	119	120	121	122	73	74	74	75	76	76	77
	99+5 mmHg	122	122	123	124	125	126	127	78	79	79	80	81	81	82
7	wysokość (cm)→	117,4	120,7	123,9	127,6	131,2	134,5	137,7	117,4	120,7	123,9	127,6	131,2	134,5	137,7
	50	98	99	99	100	101	102	103	58	58	58	59	59	60	60
	90	110	110	111	112	113	113	114	67	67	68	68	68	69	69
	95	113	114	114	115	116	117	118	70	70	70	71	71	71	72
	99	119	120	121	122	123	124	125	74	75	75	76	77	77	78
	99+5 mmHg	124	125	126	127	128	129	130	79	80	80	81	82	82	83
8	wysokość (cm)→	122,6	126,0	129,5	133,4	137,3	140,8	144,3	122,6	126,0	129,5	133,4	137,3	140,8	144,3
	50	100	101	101	102	103	104	105	58	59	59	60	60	60	61
	90	112	113	113	114	115	116	116	68	68	68	69	69	70	70
	95	115	116	117	118	119	120	120	70	71	71	72	72	73	73
	99	122	123	124	125	126	127	128	75	76	77	77	78	78	79
	99+5 mmHg	127	128	129	130	131	132	133	80	81	82	82	83	83	84
9	wysokość (cm)→	127,2	130,9	134,7	138,9	143,1	146,9	150,6	127,2	130,9	134,7	138,9	143,1	146,9	150,6
	50	102	102	103	104	105	106	107	59	60	60	60	61	61	62
	90	114	115	116	116	117	118	119	69	69	69	70	70	71	71
	95	117	118	119	120	121	122	123	71	72	72	73	73	74	74
	99	124	126	127	128	129	130	131	76	77	78	78	79	80	80
	99+5 mmHg	129	131	132	133	134	135	136	81	82	83	83	84	85	85
10	wysokość (cm)→	131,5	135,5	139,5	144,0	148,5	152,5	156,5	131,5	135,5	139,5	144,0	148,5	152,5	156,5
	50	103	104	105	106	107	108	109	60	60	61	61	62	62	63
	90	116	117	118	119	120	120	121	69	70	70	71	71	72	72
	95	119	120	121	122	124	125	125	72	73	73	74	74	75	75
	99	127	128	129	131	132	133	134	77	78	79	79	80	81	81
	99+5 mmHg	132	133	134	136	137	138	139	82	83	84	84	85	86	86
11	wysokość (cm)→	136,1	140,5	144,9	149,8	154,7	159,1	163,4	136,1	140,5	144,9	149,8	154,7	159,1	163,4
	50	105	106	107	108	109	110	111	61	61	62	62	63	63	63
	90	118	119	120	121	122	123	124	70	71	71	72	72	73	73
	95	122	123	124	125	126	127	128	73	74	74	75	75	76	76
	99	129	131	132	133	135	136	137	78	79	80	80	81	82	83
	99+5 mmHg	134	136	137	138	140	141	142	83	84	85	85	86	87	88
12	wysokość (cm)→	141,5	146,3	151,1	156,5	161,9	166,7	171,5	141,5	146,3	151,1	156,5	161,9	166,7	171,5
	50	107	108	109	111	112	113	114	61	62	62	63	64	64	65
	90	121	122	123	124	125	126	127	71	72	72	73	73	74	74
	95	124	125	126	128	129	130	131	74	74	75	76	76	77	77
	99	132	133	135	136	138	139	141	79	80	81	82	82	83	84
	99+5 mmHg	137	138	140	141	143	144	146	84	85	86	87	87	88	89
13	wysokość (cm)→	148,3	153,3	158,3	163,9	169,4	174,4	179,4	148,3	153,3	158,3	163,9	169,4	174,4	179,4
	50	109	110	112	113	114	115	117	62	63	63	64	65	65	66
	90	123	124	125	126	127	129	130	72	73	73	74	74	75	76
	95	127	128	129	131	132	133	134	75	76	76	77	77	78	79
	99	135	137	138	140	141	143	144	80	81	82	83	84	85	86
	99+5 mmHg	140	142	143	145	146	148	149	85	86	87	88	89	90	91
14	wysokość (cm)→	155,5	160,1	164,9	170,1	175,3	180,0	184,7	155,5	160,1	164,9	170,1	175,3	180,0	184,7
	50	112	113	114	115	116	117	119	63	64	64	65	65	66	66
	90	126	127	128	129	130	131	132	73	74	74	75	75	76	76
	95	130	131	132	133	134	136	137	76	77	77	78	78	79	80
	99	138	140	141	143	144	146	147	82	83	83	84	85	86	87
	99+5 mmHg	143	145	146	148	149	151	152	87	88	88	89	90	91	92
15	wysokość (cm)→	160,9	165,2	169,5	174,3	179,1	183,4	187,7	160,9	165,2	169,5	174,3	179,1	183,4	187,7
	50	114	115	116	117	118	119	120	64	65	65	65	66	66	67
	90	128	129	130	131	132	133	134	74	75	75	76	76	77	77
	95	132	133	134	135	136	137	138	77	78	78	79	79	80	80
	99	141	142	144	145	146	148	149	83	83	84	85	86	87	87
	99+5 mmHg	144	145	146	147	148	149	150	89	90	90	91	91	92	92
16	wysokość (cm)→	164,2	168,2	172,3	176,8	181,3	185,4	189,4	164,2	168,2	172,3	176,8	181,3	185,4	189,4
	50	115	116	117	118	119	120	121	65	65	65	66	66	67	67
	90	130	131	132	133	133	134	135	75	75	76	76	77	77	78
	95	134	135	136	137	138	139	140	78	78	79	79	80	80	81
	99	143	144	146	147	148	149	151	83	84	85	86	86	87	88
	99+5 mmHg	148	149	151	152	153	154	156	88	89	90	91	91	92	93
17	wysokość (cm)→	166,0	169,9	173,8	178,2	182,6	186,5	190,3	166,0	169,9	173,8	178,2	182,6	186,5	190,3
	50	116	117	118	119	120	121	122	65	65	66	66	67	67	68
	90	132	132	133	134	135	136	137	75	76	76	77	77	78	78
	95	135	136	137	138	139	140	141	78	79	79	80	80	81	81
	99	145	146	147	148	150	151	152	84	85	85	86	87	87	88
	99+5 mmHg	150	151	152	153	155	156	157	89	90	90	91	92	92	93

Uwaga! Zgodnie z klasyfikacją European Society of Hypertension i Polskiego Towarzystwa Nadciśnienia Tętniczego, u młodzieży od 16. r.ż. należy stosować klasyfikację ciśnienia tętniczego taką jak dla dorosłych, tzn. wartością progową dla rozpoznania nadciśnienia tętniczego jest ≥140/90 mmHg

Source: Z. Kułaga, et al „Standardy Medyczne Pediatria", Warszawa 2015

Adjudication of fitness to practise sport in Poland

Rozporządzenie Ministra Zdrowia z dnia 27 lutego 2019 r. - to assess the health status of children and adolescents up to 21 years of age and of athletes between 21 and 23 years of age to practise a particular sport.

Who:

- sports medicine doctor
- doctor with a certificate of completion of an introductory course for specialisation in sports medicine
- primary care physician

Adjudication of fitness to practise sport in Poland

For children and adolescents up to the age of 19, the certificate can be issued by the GP based on a preventive medical examination (health check-up) and the medical records in his/her possession.

Prophylaxis

Planned visits to the GP are preventive in nature and aim to:

- the supervision of the child's **normal development** during this extremely sensitive period of his or her life and the prevention of diseases that may interfere with this development;
- taking a systematic **medical history** and carrying out **a medical examination**, which makes it possible to detect at an early stage the initially subtle symptoms of a child's developmental disorders and illnesses, and to begin treating them quickly, so that they have the least possible negative impact on the child's development;
- implementing **immunizations**, which are the most effective way of preventing serious infectious diseases;
- setting the optimal **feeding regime** for the baby and for the situation, as well as the right diet for a breastfeeding mother;
- setting out rules for caring for and playing with the baby to ensure harmonious and appropriate **mental and physical development** (it is very important to build a good relationship between parents and child and between siblings, and the GP can play a big role in this).

Prophylaxis

Food pyramid

Physical activity

Overweight and obesity prevention

Rhinitis, cough and upper respiratory tract infections – most common reason for patients to see a doctor

Dry cough: the most common cause in a child is **a viral infection** of the respiratory tract in the initial phase, other more common causes of dry cough in children are **allergies** (for example to grass pollen or house dust mites**), asthma, foreign body aspiration**. Such causes of cough, especially chronic cough, should not be forgotten: psychogenic (nervous) cough, post-infectious cough, reflux cough (associated with gastroesophageal reflux disease).

Wet cough: most often associated with the second phase of an upper respiratory tract **viral infection**, but can also be a symptom of **bronchitis** or **pneumonia**. The cause of a wet cough in older children may be **sinusitis**; the secretions that appear in the paranasal sinuses flow down the back wall of the throat, irritate it and stimulate the cough reflex. Sometimes the wet cough is so intense that it provokes the child's vomiting reflex or even vomiting. This is particularly the case with young children, who are unable to expectorate the lingering phlegm effectively and consequently swallow it, which can cause abdominal pain or vomiting.

Rhinitis, cough and upper respiratory tract infections – most common reason for patients to see a doctor

Treatment:

- Ensuring that the child is adequately hydrated = daily fluid requirements
- Taking care of the right temperature and humidity in the baby's room. An optimal temperature (18-20°C) and humidity (40-60%) can help relieve coughs, especially dry coughs. A humidifier or simply hanging laundry in the bedroom or dampened towels on the radiator overnight is a good solution, especially in winter when the heating dries out the air in the house.
- Use of honey. Honey has cough-relieving properties comparable to cough syrups. Drinking tea or water with honey can soothe an irritated throat and make expectoration easier
- Correct positioning of the child during sleep. Use an extra pillow under the head and shoulders to prevent secretions running down the back of the throat and waking the child up during the night. In the case of a wet cough: patting on the back and ... laughing. When done correctly, patting will make expectoration easier and is best done after a saline inhalation.
- Frequent hand washing. Prevents the spread of infection.
- Avoiding cigarette smoke. Smoking near the child can irritate the upper respiratory tract and exacerbate the cough.

TASK

Calculate the daily fluid requirements of a child during an upper respiratory tract infection weighing 35 kg.

- first 10 kg of body weight - 100 ml/kg
- over 10 kg up to 20 kg body weight - add 50 ml/kg
- for every additional kilogram of body weight over 20 kg - add 20 ml/kg.

1800 ml

Rhinitis, cough and upper respiratory tract infections – most common reason for patients to see a doctor

Treatment:

- nebulisation with 0.9% NaCl and/or 3%/2,2% NaCl
- nasal spray with isotonic/hypertonic sea
- nasal spray with anti-edema and anti-inflammatory effects (xylometazoline)
- thorough nasal cleansing
- nasal ointment/spray for nasal mucosa irritation (vitamin ointment)
- antihistamines (?) (dimetinden, clemastine) / pseudoephedrine drugs
- in case of fever, antipyretics (paracetamol, ibuprofen, metamizole)
- in case of pain, analgesics (paracetamol, ibuprofen, metamizole and topically acting, e.g. lidocaine)
- nasal steroid, e.g. mometasone

TASK

Calculate the dosage of antipyretics - ibuprofen and paracetamol - for a 2-year-old child - 18 kg.

- Paracetamol 15mg/kg every 6 hours p.o./p.r./i.v.
- Ibuprofen 10mg/kg every 6-8 hours p.o./p.r.

- Calculate an additional quantity of syrup: 200mg/5ml and 120mg/5ml

270 mg – 11,25ml; 180mg – 4,5 ml

Acute Otitis Media

- Acute otitis media is an inflammatory process involving the mucosa and structures of the middle ear that develops suddenly, with general and/or local signs of acute inflammation and the presence of purulent discharge in the tympanic cavity.

- Recurrent acute otitis media is diagnosed when a patient has 3 or more cases of the disease in 6 months or 4 or more cases in 12 months.

Acute Otitis Media

•Acute otitis media usually precedes rhinitis and symptoms of upper respiratory tract infection. Typical symptom is ear pain, but this is absent in more than 20% of patients. In infants, otitis is indicated by fever, crying, sleep disturbance, vomiting may occur, sometimes diarrhoea or leakage of purulent discharge from the ear.

Acute Otitis Media

- Subjective symptoms indicative of otitis media, such as pain and ear discharge, are too insensitive to exclude acute otitis media if they are not detected.
- The diagnosis of acute otitis media should be established based on the simultaneous: the occurrence of acute symptoms and the visualisation on otoscopic examination of lesions (redness, protrusion) indicative of acute otitis media.

Acute Otitis Media

- Analgesic treatment, ibuprofen or paracetamol, should be used in all cases of acute otitis presenting with pain. Ibuprofen, as long as there are no contraindications, should be used first. In particularly severe pain and very high fever, a combination of ibuprofen with paracetamol should be used.
- In particularly severe pain, a weak opioid can be added to the analgesic. There is insufficient evidence to support the efficacy in acute otitis media of topically administered analgesics, as well as vasoconstrictors and antihistamines, as well as steroids.

Acute Otitis Media

The immediate use of an antibiotic in acute otitis media is recommended:

- in children under 6 months of age
- in children with high fever (>39C), severe pain and vomiting
- in children under 2 years of age with bilateral otitis media,
- in patients with ear discharge
- in children with craniofacial defects, Down's syndrome, immune disorders and recurrent otitis
- in children <2 years of age with unilateral otitis with moderately severe symptoms a decision should be made together with the parents: to withhold intervention or to the immediate initiation of antibiotic therapy;
- In other cases of uncomplicated acute otitis media, it is recommended to withhold antibiotics for 48-72 hours and administer concomitant treatment with anti-inflammatory and analgesic treatment and possibly prescribing it if there is no improvement

Acute Otitis Media

- **Amoxicillin** is the antibiotic of choice for the treatment of acute otitis media. Dosage: 90mg/kg/24h in 2 divided doses (>40 kg 1.5-2g every 12 hours).
- The treatment time for uncomplicated acute otitis media can be shortened to **5 days** in adults and children over 2 years of age, while it should be **10 days in children under 2 years of age**.
- If a late-type allergic reaction to amoxicillin occurs, cephalosporins should be used in the treatment: **cefuroxime axetil** for 5 days, and in children under 2 years of age for 10 days and in more severe cases: **ceftriaxone** for 3 days given intravenously or intramuscularly.
- A late-type allergic reaction to all beta-lactams or an immediate reaction to any beta-lactam is an indication for treatment with the **macrolide - clarithromycin** for 10 days.
- Azithromycin should not be used in the treatment

Acute Otitis Media

- If there is no response to amoxicillin or an early recurrence of the infection (up to 7 days after the end of treatment), it is recommended to use:- amoxicillin with clavulanate for 10 days- ceftriaxone administered parenterally once daily for 3 days.

Streptococcal pharyngitis

also known as streptococcal sore throat

- Viral infections account for approximately 70-85% of causes of acute pharyngitis and tonsillopharyngitis in children over 3 years of age.
- They are most commonly caused by rhinoviruses, coronaviruses, adenoviruses, Epstein-Barr viruses, Coxsackie viruses, Herpes simplex viruses and influenza and paragrpa viruses.
- The bacteria responsible for 15-30% of infections in children are, in the vast majority of cases: Streptococcus pyogenes (group A beta-haemolytic streptococci), while group C and G streptococci are found much less frequently, in 5-11% of cases.
- Acute pharyngitis and tonsillopharyngitis is one of the most common causes of visits to the GP, in some countries, reaching approximately 200 consultations per year per 1,000 people
- The incubation period for viral pharyngitis is usually 1-6 days, and infection occurs by the droplet route and by contact with nasopharyngeal secretions from the affected person (also contaminating hands)

Streptococcal pharyngitis

Modified Centor Criteria (McIsaac)	Score
Fever	1
Tonsillar Exudate	1
Absent Cough	1
Anterior Cervical LAD	1
Age 3-14 years	1
Age 15-44 years	0
Age >44 years	-1

Modified Centor score

Points	Probability of Strep	Management
1 or fewer	<10%	No antibiotic or culture needed
2	11–17%	Antibiotic based on culture or RADT
3	28–35%	
4 or 5	52%	Empiric antibiotics

Wikipedia

Streptococcal pharyngitis

- In order to limit the spread of infection, a patient with streptococcal pharyngitis or tonsillitis should not have contact with other people in kindergarten, school or at work for a period of 24 hours after taking the effective antibiotic.

Streptococcal pharyngitis

- For the treatment of acute pharyngitis and tonsillitis caused by Streptococcus pyogenes **phenoxymethylpenicillin** should be used orally.
- In the event of poor patient co-operation or difficulty in taking antibiotics orally, it is recommended a single intramuscular administration of **benzathine benzylpenicillin**.
- In the corrected treatment of streptococcal pharyngitis and tonsillitis, the following can be used: **cefadroxil** or **cephalexin**.
- In streptococcal pharyngitis and tonsillitis, **macrolides** should be reserved only forpatients with immediate hypersensitivity to beta-lactams

Scarlet fever

- Affects children between five and 15 years of age
- The signs and symptoms include a sore throat, fever, headache, swollen lymph nodes, and **a characteristic rash**
- The rash occurs as a result of capillary damage by exotoxins produced by S.pyogenes.

Bronchitis

- Acute bronchitis (AR) is a respiratory infection whose predominant symptom is a cough, dry or with expectoration of secretions, lasting no longer than 3 weeks, which may be accompanied by auscultatory symptoms such as wheezing, rhonchi or coarse crackles (rales).

Bronchitis

- Acute bronchitis is diagnosed on the basis of clinical symptoms, primarily coughing, which may be accompanied by rhonchi, coarse crackles (rales) or wheezing. When acute bronchitis is suspected and no symptoms of pneumonia are found (such as tachycardia (in adults above 100/min), tachypnoe (in adults above 24/min), body temperature > 38 degrees C and focal auscultatory changes) no further diagnosis is necessary.
- In patients with acute bronchitis who present with wheezing, coughing attacks and/or dyspnoea, or symptoms related to allergen exposure, a diagnosis for asthma is recommended.
- The diagnosis of influenza virus infection can be made on the basis of clinical examination during an epidemic increase in cases with high fever, cough and headache.

Bronchiolitis

- Acute bronchiolitis is diagnosed on the basis of clinical symptoms indicating narrowing of the small airways in the form of expiratory dyspnoea, wheezing, rales and hypoxia, appearing for the first time in life in the course of arespiratory infections in children under 2 years of age.

- In cases of acute bronchiolitis in children not requiring hospitalisation, laboratory tests are generally not necessary as it does not affect the clinical course and prognosis. In children with bronchiolitis, admitted to hospital, additional investigations aim to exclude other conditions, such as pneumonia, to assess the severity of the disorder and epidemiological considerations.

Bronchiolitis – when refer to the hospital?

- When deciding whether to hospitalize children with acute bronchiolitis, the number of breaths per minute, intercostal retraction, the degree of hemoglobin oxygen saturation and risk factors for the severe course of the infection should be considered
- Risk factors mainly include chronic respiratory and cardiovascular diseases, immune deficiencies and difficulties in hydration

Vitals - children

Age	Normal heart rate (beats per minute)		Normal respiratory rate (breaths per minute)	
	Range[34]	Typical example	Range[35]	Typical example
Newborn	100–160[36]	130	30–50	40
0–5 months	90–150	120	25–40	30
6–12 months	80–140	110	20–30	25
1–3 years	80–130	105	20–30	25
3–5 years	80–120	100	20–30	25
6–10 years	70–110	90	15–30	20
11–14 years	60–105	80	12–20	16
15–20 years	60–100	80	12–30[37]	20

Wikipedia

AGE	RR
<2 mo	>60
2-12 mo	>50
2-5 yo	>40
>5 yo	>30

Kawalec, Kulus

Bronchitis/Bronchiolitis

- In acute bronchitis, routine performance of additional tests is not justified
- In acute bronchiolitis in children treated at home, routine performing radiological, biochemical and microbiological tests is not justified
- Routine use of the antibiotic is not recommended in acute bronchitis or bronchiolitis.
- For cough prolonged beyond 14 days, it may be advisable to administer a macrolide, especially if pertussis is suspected. In young children with a productive cough persisting for more than 4 weeks without a decreasing trend a diagnosis of chronic bacterial bronchitis is made and then the administration of an antibiotic (amoxicillin with clavulonic acid or macrolide) for 10 to 14 days.

Bronchitis/Bronchiolitis

- The routine use of bronchodilators (beta2-mimetics or cholinolytics) in acute bronchitis is not recommended. The use of these drugs may be considered in patients with acute bronchitis who are found to be wheezing, if the benefits of their use are likely to outweigh the risk of adverse effects.
- In individual cases of acute bronchiolitis short-term use of epinephrine or beta2-mimetics may be considered.
- Hypertonic salt solutions (3% NaCl) may facilitate airway clearance probably by rehydrating secretions and reducing mucosal oedema
- Saturation ??? <90%

Pneumonia

- The diagnosis of pneumonia in children is made on the basis of clinical symptoms. Radiological examination is indicated when complications are suspected.
- Most sensitive and specific symptoms for pneumonia in children are: tachypnoe, fever above 38 degrees C, intercostal retraction, and by auscultation the presence of crackles especially unilateral. Failure to identify these symptoms significantly reduces the likelihood of pneumonia in children.

Pneumonia - etiology

Tabela I. **Etiologia pozaszpitalnego zapalenia płuc w zależności od wieku** [1]

Wiek **Age**	Etiologia **Etiology**
Noworodki (do 20 dnia życia) **Newborns up to 20 days**	Paciorkowce grupy B Enterobacteriaceae Cytomegalowirus *Listeria monocytogenes*
3 tydzień – 3 miesiąc **3 weeks to 3 mo**	*Chlamydia trachomatis* RSV, wirus paragrypy *Streptococcus pneumoniae* *Bordetella pertussis* *Staphylococcus aureus*
4 miesiąc – 4 rok życia **4 mo to 4 yo**	RSV, wirusy grypy i paragrypy, adenowirusy, rinowirusy - viral *Streptococcus pneumoniae* *Haemophilus influenzae* *Mycoplasma pneumoniae*
5–15 rok życia **5yo to 15 yo**	*Streptococcus pneumoniae* *Mycoplasma pneumoniae* *Chlamydophila pneumoniae*

Rekomendacje postępowania w pozaszpitalnych zakażeniach układu oddechowego 2016
Hryniewicz et al

Pneumonia - indications for referral to hospital

- severe course (symptoms of sepsis or shock),
- circulatory failure,
- respiratory rate >70/min in infants and >40/min in older children,
- heart rate >160/min in infants or >140/min in older children,
- leucocytosis >20,000 or <3,000,
- PaO_2 <60 mmHg, SaO_2 <92% and $PaCO_2$ >50 mmHg,
- neurological symptoms, disturbances of consciousness and convulsions,
- dehydration and other water-electrolyte disturbances,
- laboratory findings indicative of significant infection and inflammation,
- extensive pulmonary lesions and pleural reaction on radiological examination,
- coexistence of other serious diseases, e.g. asthma, heart defect,
- age <6 mo,
- poverty and psycho-educational problems.

Pneumonia - treatment

- In alleviating cough in out-of-hospital pneumonia in children, proper care and, above all, providing a supply of cool, moist air is necessary.
- The use of antihistamines is not recommended in children with community-acquired pneumonia, as their beneficial effect has not been proven (?)

Pneumonia – treatment 3 weeks to 3 mo

- Out-of-hospital pneumonia in children aged between 3 weeks and 3 months:
- - cefuroxime: 75-100 mg/kg/day or 100-150 mg/kg/day in more severe infections, in divided doses given every 8 hours intravenously;
- - amoxicillin with clavulanate in divided doses given every 6-8 hrs, so that the dose of amoxicillin is 100 mg/kg/day intravenously;
- - in severe, life-threatening cases, the administration of cefotaxime (50-180 mg/kg/day in divided doses given every 6-8 hours) or ceftriaxone (50-100 mg/kg/day given as a single daily dose), in combination with cloxacillin (100 mg/kg/day in divided doses given every 6 hours) intravenously;
- - if the clinical picture is suggestive of atypical disease, a first-line drugmay be a macrolide

Pneumonia – treatment 3 mo to 5yo

- Out-of-hospital pneumonia in children aged between 4 months and 5 years :
- mild course and without high fever, and in particular in a child vaccinated with pneumococcal conjugate vaccine, the omission of antibiotics may be considered
- - amoxicillin 75-90 mg/kg/day is recommended for outpatient treatment in 3 doses every 8 hours orally;
- - in milder cases treated on an outpatient basis, the duration of treatment of out-of-hospital pneumonia can be shortened to 5 days; in more severe forms, treatment for 7-10 days

Pneumonia – treatment 5 yo to 15 yo

- Amoxicillin, ampicillin are recommended
- In more severe forms of infection, it is recommended to combine an beta-lactam antibiotic with anti-pneumococcal activity (amoxicillin/ampicillin, ceftriaxone, cefotaxime) with a macrolide
- In children weighing more than 40 kg, amoxicillin should be administered orally at a dose of 75-90 mg/day in three divided doses (i.e. every 8 hours), or in the hospital setting ampicillin intravenously 1-2 g every 6 hours;
- In children weighing less than 40 kg, amoxicillin is administered orally at a dose of 75-90 mg/kg/day in three divided doses (i.e. every 8 hours), and in more severe cases, intravenous ampicillin at a dose of 100-200mg/kg/day, in four divided doses (i.e. every 6 hours, no more than 4g/day);

Pneumonia – Adjusted treatment

- Adjusted treatment applies to the following situations:
- lack of improvement or clinical deterioration after first-line treatment,
- recurrence of pneumonia (recurrence of symptoms after a period of resolution),
- allergy to beta-lactam antibiotics.

Lack of improvement after treatment may be due to the following reasons: resistance of the microorganism to the antibiotic used, non-adherence to the antibiotic dosage recommendations, occurrence of complications of pneumonia; misdiagnosis of bacterial pneumonia; concomitant medical conditions.

Pneumonia – Adjusted treatment

- If no improvement is found after first-line antibiotic treatment, chest radiography is recommended, and in case of further ambiguity, a CT scan is recommended.
- The choice of a second-line antibiotic depends on the age of the child, the antibiotic therapy used so far and the antibiotic therapy to date and the complications identified.
- Corrected treatment in children between 5 and 15 years of age: in case of relapse or use of an antibiotic within the last month for any reason, the use of amoxicillin-clavulanate (7:1 or 14:1) is recommended, so that the dose of amoxicillin is 90 mg/kg/day in 3 doses every 8 hours.

Pneumonia – Adjusted treatment

- If there is no clear improvement after amoxicillin/ampicillin or amoxicillin/clavulanate and a suspected atypical etiology clarithromycin should be used:
- in children weighing less than 40 kg at a dose of 15 mg/kg/day in 2 doses every 12 h or
- azithromycin at a single daily dose of 10 mg/kg/day (not to exceed 500 mg/day) and then for 4 days 5 mg/kg/day (not to exceed 250 mg/day)
- in the case of intolerance or non-immediate allergy to amoxicillin, use:
- - cefuroxime axetil orally in children weighing less than 40 kg at a dose of 20-30 mg/kg/day in 2 doses every 12 hours not exceeding 500 mg/day;
- in severe cases of out-of-hospital pneumonia in children, use ceftriaxone or cefotaxime
- in cases of immediate allergy to amoxicillin, use clarithromycin

Failure to thrive

Child does not gain weight or falls (!) off the centile grid - noticed by parents or GP at visits during child health check-ups, vaccinations.

Interview and physical examination

Recommendations:

- **Keep a feeding diary** - please weigh your baby before and after feeds - record values in a notebook. Please record feeding times and duration of feeds.
- Suspected gastro-oesophageal reflux - offer **magnesium alginate, simethicone** orally
- Additional tests**: CBC, creatinine, urea, ALT, AST GGTP, albumin, electrolytes: Na, K, Ca, P; thyroid hormones: TSH, fT4, (fT3); urinalysis and urine culture, stool culture, test for occult blood** (cow's milk protein allergy), occasionally: **total IgA** and **anti-transglutaminase antibodies** (suspicion of coeliac disease), **sweat chlorides** (diagnosis of cystic fibrosis),examine **the karyotype** (genetic abnormalities).
- **Chest X-ray** and **abdominal ultrasound** complete the diagnosis.
- Refer to cardiologist - **ECHO**

Iron deficiency/anemia (in infants)

Interview and physical examination!!! Pregnancy

Preventive laboratory tests in children at risk:

- Newborns born prematurely - 1-2 months of age
- Infants 9-15 months of age
- Children 2-5 years of age
- Girls 13 years of age and every 1-2 years thereafter
- Boys 1 x during pubertal growth spurt

Iron deficiency/anemia (in infants)

ABSOLUTE INDICATIONS FOR IRON PROPHYLAXIS:

1-2 mg/kg/24h (from 3 months of age - i.e. after completing 8 weeks to the end of 1 year of age):

- Children born prematurely
- Babies born at term with a low birth weight of 2-2.5 kg
- Children from multiple pregnancies
- Children with reduced haemoglobin levels in the neonatal period
- Children at risk of perinatal blood loss
- Children of mothers with anaemia during pregnancy

RELATIVE INDICATIONS FOR IRON PROPHYLAXIS:

1-2 mg/kg/24h

- Recurrent respiratory and gastrointestinal infections
- Period of rapid growth
- Impaired appetite
- A tendency to bleeding
- Heavy menstruation
- Children who are overweight or obese

Iron deficiency/anemia (in infants)

TREATMENT

Dietary modification, if necessary - pharmacological treatment:

- ✓ Iron deficiency without anaemia - iron 3 mg/kg/orally 1 dose in the evening maximum 150-200 mg - one month after starting treatment - morphology + ferritin and possibly CRP, if ferritin increases - continue for 2-3 months - 3 months after starting treatment - morphology, ferritin and CRP - then 3 months after finishing treatment - morphology, ferritin and CRP.
- ✓ If there was no increase in ferritin or anaemia developed one month after starting treatment - assessment of adherence and side effects. Increase dose to 6-7 mg/kg (but still max. 150-200 mg/24h). Consider referral to the ward (intravenous iron supply, diagnosis for malabsorption and other causes of iron deficiency).

TASK

- **abdominal pain, diarrhoea, vomiting**
- **allergies**
- **skin changes (atopic dermatitis, chicken pox, shingles, erythema infectiosum, roseola)**

- **Symptoms**
- **Diagnosis criteria**
- **Additional tests, labs**
- **Treatment**
- **(Complications)**

- Haematological tests: peripheral blood count with platelets, peripheral blood count with platelet count and platelets, reticulocytes, red blood cell sedimentation reaction (ESR).
- Biochemical and immunochemical tests: sodium, potassium, ionised calcium, irontotal iron binding capacity (TIBC), transferrin concentration, glycated haemoglobin concentration (HbAlc), urea, creatinine, glucose, glucose load test, total protein, proteinogram, albumin, C-reactive protein (CRP), uric acid, total cholesterolcholesterol-HDL, cholesterol-LDL, triglycerides (TG), total bilirubin, direct bilirubin,alkaline phosphatase (ALP), aspartate aminotransferase (AST), alanine aminotransferase (ALT), gammaglutamyltranspeptidase (GGTP), amylase, creatine kinase (CK), total acid phosphatase (ACP), rheumatoid factor (RF), antistreptolysin O (ASO), TSH, HBs-AgHBs antygen, VDRL, FT3, FT4, PSA - Total prostate specific antigen
- Urinalysis: general urinalysis with evaluation of physical, chemical properties and microscopic evaluation of the sediment, quantitative determination of protein, quantitative determination of glucose, quantitative determination of calcium, quantitative determination of amylase.
- Faecal examination: general examination, parasites, occult blood - by immunochemical method.
- Coagulation tests: INR, APTT, fibrinogen.
- Microbiological examinations: urine culture with antybiogram, throat culture with antybiogram, stool culture for Salmonella and Shigella, SARS-CoV-2 antigen test.

- Electrocardiography (ECG) at rest.
- Ultrasound: of the thyroid and parathyroid glands, salivary gland, of the kidneys, ureters, urinary bladder, of the abdomen and retroperitoneal space, including initial evaluation of the prostate gland, of peripheral lymph nodes.
- X-ray: chest in AP and lateral projection, bone: spine, limbs and pelvis in AP and lateral projection, skull, sinus, abdominal.
- Referral to: gastroscopy, colonoscopy, computed tomography of the lungs.

- Additionally:
- Ferritin, vitamin B12, folic acid, anti CCP, CRP rapid quantitative test, anti-HCV antibodies, total immunoglobulin E (IgE), specific immunoglobulin E (IgE): inhalation: hazel, alder, birch, grasses, rye, mugwort, house dust mites, dog, cat, altenaria; oral: milk, eggs, wheat, soya, peanuts, hazelnuts, fish, seafood - shellfish, carrots, apple, H. pylori antigen in faeces - cassette test, H. pylori antigen in faeces - laboratory test, strep-test.

Abdominal pain

Red flags:

- abdominal pain that awakens the child at night,
- disorders concerning bowel movements (constipation, diarrhea especially with an addition of blood or pus),
- pain located far from the umbilicus, especially changing in character to acute and/or radiating to the back or lower extremities, accompanying pain,
- a decrease in the child's weight or inhibition of further weight gain and growth,
- other general symptoms, i.e. fever or subfebrile states, weakness, joint pains, delayed puberty, positive family history of inflammatory bowel disease or other chronic gastrointestinal diseases.
- immune deficiency
- jaundice
- swallowing disorders

Abdominal pain

- Usually caused by acute gastroenteritis (rota, adeno, norovirus), accompanied by diarrhea, vomiting.
- Equally often, abdominal pain is caused by constipation – interview is very important when examining a child.
- Symptom treatment: **adequate oral hydration**, painkillers (paracetamol, metamizole, sometimes ibuprofen); antispasmodic drugs (e.g. drotaverine - from 6 years old), you can add to the treatment probiotic, simeticone when the abdomen is bloated.
- Consider ondansetron (medicine to prevent nausea and vomiting) only if there are problems with oral fluids and no indication for hospitalization - be very cautious.
- Recommend easily digestible diet, give up sweets and juices.
- Additional tests can be considered: basic blood tests - CBC, CRP, ALT, AST, bilirubin, general urinalysis, stool for parasites, stool culture, abdominal ultrasound.
- Always check the peritoneal symptoms and the presence of hernia

Allergies

- Remember the glass test!
- Usually reddened papules or patches, itching and burning.
- In an acute reaction you can use up to **4 times the dose**.
- Next, think **steroids** (prednisolone 1 mg/kg) and **adrenaline** (10ug/kg max 0,5mg; **i.m.** or s.c.)!

Allergies

Drug	Age
Dimetindene (1st)	2nd month
Hydroxyzine (1st)	2nd year/12th month
Clemastine (1st)	2nd year
Cetirizine (2nd)	2nd year
Levocetirizine (2nd)	2nd year
Loratadine (2nd)	2nd year
Desloratadine (2nd)	2nd year
Rupatadine (2nd)	2nd year
Bilastine (2nd)	6th year

Other ”rashes of childhood”

Check:

- measles,
- rubella,
- erythema infectiosum - fifth disease, slapped cheek syndrome,
- roseola - sixth disease,
- chickenpox,
- herpes zoster,
- herpes simplex,
- infectious mononucleosis

Urinary Tract Infections (UTIs)

In all children up to 5 years of age with fever without an identifiable cause and in children with symptoms suggestive of urinary tract infection or with risk factors for urinary tract infection, urinary tract infection should be suspected and urinalysis performed.

Urinary Tract Infections (UTIs)

The following methods of urine collection in children are recommended:

- for general examination by any method
- for microbiological testing:
  - from the central stream,
  - by bladder catheterisation or suprapubic puncture,

directly into a sterile container. Urine should be collected after thorough toileting around the urethral orifice.

Urinary Tract Infections (UTIs)

Significant bacteriuria is considered to be the presence of bacteria in the urine in the amount of:

- 10^4 CFU/ml in a urine sample collected by catheterisation
- 10^3 CFU/mL in a urine sample collected by epicutaneous puncture
- $\geq 10^5$ CFU/ml in a urine sample collected from the mid-stream

Urinary Tract Infections (UTIs)

In all children under 3 months of age with a urinary tract infection, hospitalization is suggested and the initiation of parenteral antibiotic therapy.

In children with UTIs aged 3 months and older, the choice of treatment, depending on the patient's general condition, should include: oral, intravenous or sequential (intravenous followed by oral) therapy. In patients at low risk of severe disease (sepsis) it is suggested to consider outpatient treatment and oral therapy.

Urinary Tract Infections (UTIs)

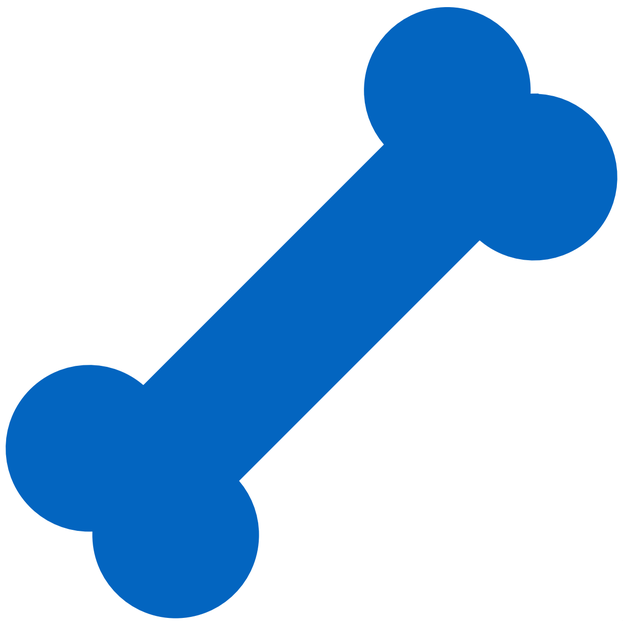
For the empirical treatment of UTI in children under 3 months of age a third-generation cephalosporin or the combination of an ampicillin and anaminoglycoside.

For the empirical treatment of UTI in children aged 3 months and older the antibiotics of first choice are: cephalosporin II or III generation, amoxicillin+clavulanic acid (only in situations of confirmed sensitivity), ciprofloxacin (according to the limitations of age).

Time of treatment: 7-14 days for acute pyelonephritis and 3-5 days for cystitis.

Injuries and fractures

- History of the circumstances of the injury (low- or high-energy?);
- Physical examination - identify area of pain, heat, sensation of touch, swelling, bruising or subcutaneous hemorrhage and joint mobility.
- In head injury, neurological assessment of the patient is necessary.
- Prescribe systemic analgesic treatment (paracetamol, ibuprofen), local anti-oedema and analgesic treatment (arnica ointment, aluminium acetate, ibuprofen).
- If necessary, elevation of the limb and avoidance of use of the limb for 7-14 days may be recommended, or x-rays if there is a suspicion of fracture (+ referral to surgeon).



THANK YOU

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