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France's 2020 Report Card on Physical Activity and Sedentary Behaviors in children and youth: Results and Progression

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Abstract

Background: There is an alarming and constant worldwide progression of physical inactivity and sedentary behaviors in children and adolescents. The present paper summarizes findings from France's 2020 Report Card on physical activity for children and youth, comparing its results to its two previous editions (2016 and 2018).

Methods: France's 2020 Report Card follows the standardized methodology established by the Active Healthy Kids Global Matrix, grading 10 common physical activity indicators using the best available evidence. Grades were informed by national surveys, peer-reviewed literature, government and non-government reports, and online information.

Results: The expert panel awarded the following grades: Overall Physical Activity: D; Organized Sport Participation and Physical Activity: C-; Active Play: INC; Active Transportation: C-; Sedentary

39 Behaviors: D-; Family and Peers: D-; Physical Fitness: D; School: B-; Community and the Built
40 Environment: F; Government: C.

41 **Conclusions:** This 2020 edition of France's Report Card again highlights the alarming levels of physical
42 activity and sedentary behaviors among French children and adolescents, calling for the development
43 of effective national action. It also draws attention on the particular deleterious effects of the COVID-
44 19 confinement on youth's movement behaviors that significantly worsened the situation.

45 **Key words:** Adolescents, Sedentary Behaviors, Health, Active Transportation, Physical Activity
46 Promotion

47

48

49 **Introduction**

50 Despite the continuously growing body of evidence that undoubtedly describes the beneficial effects
51 of an active lifestyle on overall health from the youngest age ^{1,2}, studies describe persistently
52 insufficient and declining levels of physical activity ³⁻⁷ and an alarming progression of the time
53 devoted to sedentary behaviors ^{3-6,8-10}.

54 In 2005, Canada launched the first Report Card (RC) initiative, proposing a detailed analysis of national
55 data on the physical activity and sedentary behaviors of Canadian youth ¹¹. This national initiative
56 quickly influenced governmental policies, practices, and research orientations ¹², inspiring 15
57 countries to embrace this Report Card process in a coordinated way in 2014, leading to the creation
58 of the international Global Matrix 1.0 ¹³. Gaining in interest and popularity, 38 countries took part in
59 the Global Matrix 2.0 in 2016 ¹⁴, wherein France presented its first Report Card under the umbrella of
60 the French National Observatory for Physical Activity and Sedentary Behaviors (ONAPS) ¹⁵. As part of
61 the Global Matrix 3.0 (involving 49 countries from 6 continents), the ONAPS proposed a 2018
62 updated version of the 2016 French report card, confirming very concerning levels of physical activity

63 and sedentary behaviors among French children and youth ^{16,17}. Moreover, among the 10 physical
64 activity indicators studied, Active Play, Family and Peers, and Community and Environment were
65 found to have insufficient information at the national level. Although this 2018 Report Card placed
66 France among the top 10% and 35% countries regarding Physical Fitness and School indicators,
67 respectively, the country was behind the majority of the European countries when it came to
68 Organized Sport and Physical Activity, Active Transportation, and Sedentary Behaviors ^{16,17}.

69 While the Global Matrix 4.0 is planned to be released in 2022, the ONAPS proposes here an
70 intermediary evaluation of the 10 physical activity indicators, particularly focusing on the effects of
71 the unpredicted 2020 sanitary lock-down imposed to slow down the progression of the COVID-19
72 pandemic.

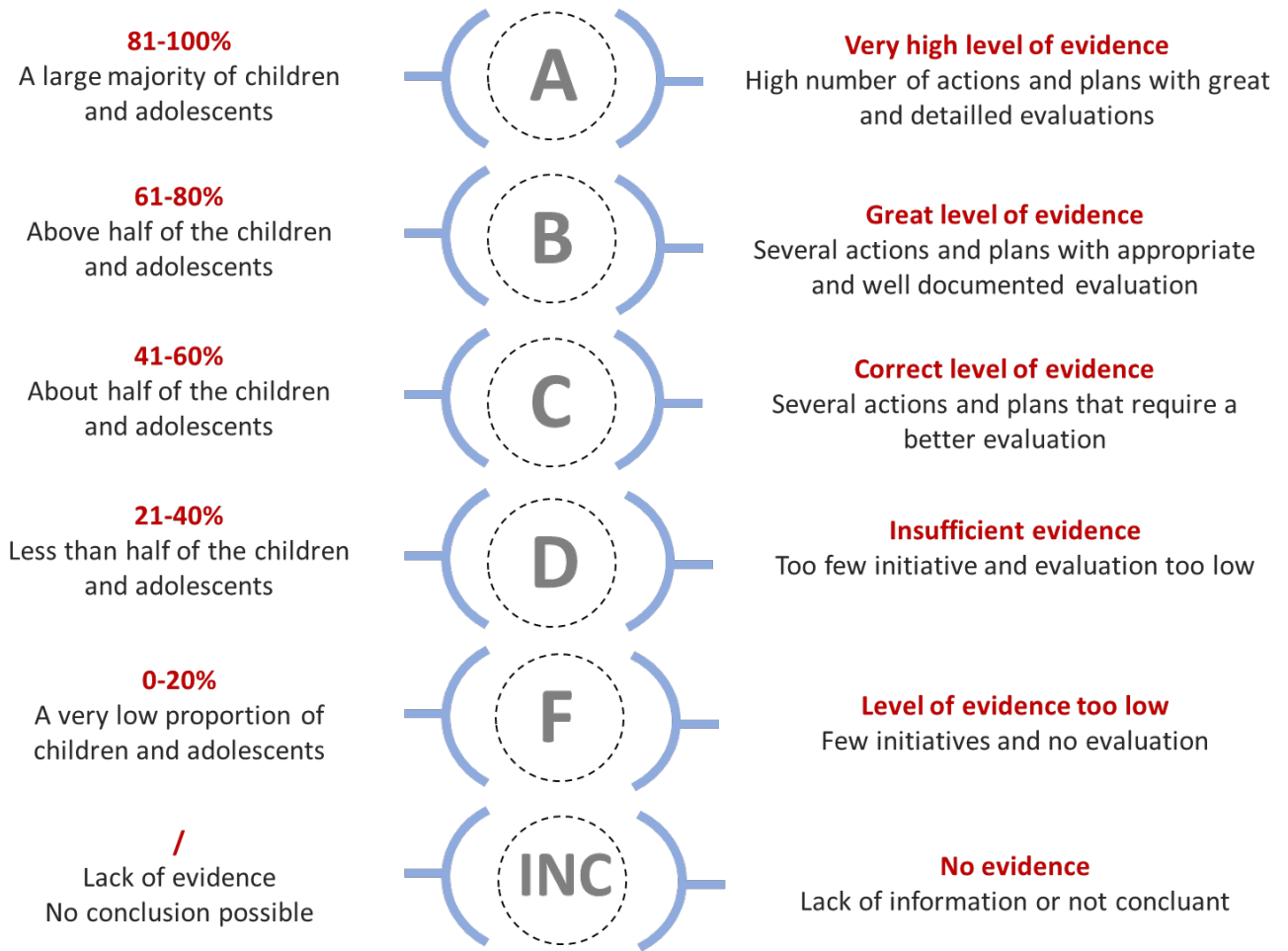
73

74 **Methods**

75 Following the classical and collective methodology established by the Global Alliance ¹⁸ France's 2020
76 Report Card was prepared and conceived by an expert panel composed of members of the French
77 National Observatory for Physical Activity and Sedentary Behaviors (ONAPS, www.onaps.fr), external
78 and academic experts, and members from public health agencies (Santé Publique France). Briefly, the
79 panel leader was responsible for integrating each expert's contribution and for writing the Report
80 Card main document. All the authors contributed to identifying key data sources and synthesized the
81 evidence from a range of national surveys, reviewed the entire document, and contributed to the
82 grade for each indicator.

83 The 10 physical activity indicators selected at the international level by the Global Alliance were
84 evaluated by the panel: Overall Physical Activity Levels, Organized Sport and Physical Activity, Active
85 Play, Active Transportation, Sedentary Behaviors, Physical Fitness, Family and Peers, School,
86 Community and Environment, and Governmental and Institutional Implication.

87 The expert panel first connected in March 2020 and indicators were assigned to specific members of
88 the panel according to their area of interest and expertise. Each expert (or group of experts),
89 supported by the operative agents of the ONAPS, compiled the best available evidence for 5- to 17-
90 year-old children and adolescents, performed an objective analysis, and wrote the RC section specific
91 to their indicator. Based on each expert report, grades were collectively discussed and assigned in
92 November 2020. Each indicator evaluation with quantitative data was graded using the standardized
93 benchmarks and grading scheme provided by the AHKGA (Active Healthy Kids Global Alliance)¹⁸. A
94 new grading scheme was developed and used when it came to indicators with more qualitative
95 information and the need to acknowledge the degree of investment of actors (such as the
96 governmental implication or Community and Environment indicators), as previously suggested¹⁹.
97 This adapted scheme is presented in Figure 1. As part of this 2020 Report Card, a particular focus was
98 on the physical activity and sedentary behaviors of children and adolescents during the COVID-19
99 related confinement. While the available data were analyzed and discussed in the report, no grade
100 was assigned to this special section.



101

102

Figure 1: Grading system adapted from the AHKGA (adapted from Aubert et al., 2018)¹⁸.

103

104 **Results and discussion**

105

106 **Table 1:** Evolution of the French Report Card grades from 2016 to 2020 for each physical activity

107 indicator.

Indicators	2016	2018	2020
Overall Physical Activity	INC	D	D
Organized Sport and Physical Activity	D	C-	C-
Active Play	NA	INC	INC

Active Transportation	D	C-	C-
Sedentary Behaviors	D	D-	D-
Physical Fitness	NA	B-	D
Family and Peers	INC	INC	D-
School	B	B	B-
Community and Environment	INC	INC	F
Government	INC	C	C
Average	D	C-	C-

108 Note: NA = not assigned; INC = incomplete grade.

109

110

111 ***Overall Physical Activity: D***

112 Based on the available data gathered, 50.7% of French boys and 33.3% of girls aged 6-17 years old
 113 reached the physical activity guidelines (of 60 minutes of moderate to vigorous PA per day), with
 114 proportions declining with age and time, especially at the time of puberty. About 70% of boys and
 115 56% of girls aged 6-10 years old kids met the PA recommendations, compared to 34% and 20%
 116 between 11 to 14 years, and 40% and 16% between 15 and 17 years old, respectively ²⁰. The HBSC
 117 survey indicates that between 2014 and 2018, the percentage of 11-year-old girls meeting the
 118 guidelines declined from 25% to 17%, compared to a drop from 11% to 9% in boys ²¹. In 13-year-old
 119 girls and boys, the proportion of youth meeting PA recommendations dropped from 16% to 14% and
 120 from 9% to 7%, respectively. Similarly, rates dropped from 14% to 11% and 6% to 4% among 15 years
 121 old boys and girls, respectively. Girls, compared with boys, showed a greater decline in PA levels from
 122 11 years of age, particularly for moderate-to-vigorous PA.

123 The 2020 RC demonstrated the need for better and more regular monitoring of physical activity at
 124 the national level. The majority of the results are based on the main national surveys ²² whose results

125 were already considered in the 2018 RC. However, these were updated in 2020 with regards to the
126 Esteban's data ²² and HBSC 2017-2018 surveys ²¹.

127 While the 2016RC concluded that there was a lack of evidence to properly and objectively evaluate
128 this indicator (proposing then the grade "INC"), the 2018RC committee determined that sufficient
129 data was available to assign the grade of "D". Two years later, although some new data are available,
130 the status of the overall physical activity level of children and adolescents in France remains
131 worrying, and the expert panel maintained a grade of "D".

132 Increasing our national efforts for a larger and more efficient national surveillance system is urgent
133 given the dramatic evolution of the physical activity level of children and adolescents. As part of the
134 2020RC conclusions, the expert panel recommends the implementation of educational campaigns
135 regarding the exact definition and components of physical activity and its overall health and social
136 impact, addressed to both parents and kids, but also to all the actors in kids' lives (e.g., educators or
137 coaches). It is also essential to increase the opportunities to be active, through urban and
138 environmental strategies and facilities.

139

140 ***Organized Sport and Physical Activity: C-***

141 As for the last two reports, the participation in organized sports was evaluated based on the number
142 of sports licenses delivered by French sports federations after registration in sports clubs for children
143 and youth (excluding licenses delivered for school-based organized sports). In 2018, 8.2 million
144 children and adolescents were registered members of a sport federation, which corresponds to 50%
145 of the total number of federative licenses in France. A total of 59.5% of these licenses concern boys.
146 10 to 14 year olds represent the highest number of licenses, with a progressive decline after 14 years
147 in both boys and girls, regardless of the type of sport. Between 2017 and 2018, the number of
148 licenses across all federations combined declined by 761,601 among kids under 9 years old, 168,128
149 in 10 to 14 years old children, and 42,591 in adolescents aged 15 to 19 years old.

150 A grade of “D” was attributed to this indicator in 2016, and upgraded to a “C-” in 2018. The 2020
 151 Report Card expert panel collectively decided to maintain this grade of “C-”. Indeed, the trends and
 152 conclusions provided by available literature remain identical to what was observed two years ago.

153 As already underlined in 2018, the available data do not provide any information concerning the
 154 dose, frequency, and intensity of activity during organized sports, which should be assessed ¹⁶. This
 155 would inform the extent to which these federative practices contribute to the overall level of physical
 156 activity of our children and adolescents. Our committee encourages the development of new sport
 157 federations that would attract more youth, especially for girls, as well as the development of multi-
 158 activity licenses by federations. Further research is also needed to identify the potential barriers to
 159 accessing organized sport and physical activity for French children and youth, and if there is equal
 160 opportunity for participation in affordable and appealing activities across different territories (rural
 161 versus urban), genders, socio-economic levels, and sporting abilities.

162

163 ***Active Play: INC***

164 While this indicator was not included in the RC analysis back in 2016, the 2018 RC pointed out a lack
 165 of evaluation and available evidence for active play in France (grade “NC”). National surveys
 166 (ESTEBAN 2014-2016 and Inca 3) reported the only available data showing that only 38% of boys and
 167 39.3% of girls aged 6-10 years old reported engaging in outdoor active play every school day, and
 168 32.2% of boys and 33.2% of girls also reported playing outdoors on non-school days ²².
 169 Unfortunately, the present 2020 analysis did not find any more recent evidence regarding this
 170 indicator and decided to maintain the grade “NC”.

171 This lack of national evaluation of active play indicator is not specific to France, with the majority of
 172 the Global Matrix 3.0 countries unable to evaluate this indicator in 2018 due to missing evidence ¹⁶.

173 While there is still a need for an international consensus on the definition of active play, future
 174 surveys and studies should include simple question to parents to estimate the engagement of

175 children in active play and estimate the contribution to their overall physical activity level.
176 Methodological studies should be conducted to develop reliable and validated tools to properly
177 assess active play in children.

178

179 ***Active Transportation: C-***

180 According to national data previously collected within the Esteban survey, 40% of children aged 6-10
181 years old use active transportation to go to school (35% of boys and 45% of girls)²², and 43% of 11 to
182 14 year olds use active transportation to reach their school (42% of boys and 44% of girls)²³. While
183 97% of parents declare that safety is among the top rated criteria to choose the mode of
184 transportation to school for their child, 55% admit that the lack of security is among the primary
185 reasons not to choose active transportation. While local administrations have started to increase
186 their annual budget allocated to the development of cycle lanes, securing additional safe walking
187 paths and bike lanes must be a priority. Overall, the global cycling and walking infrastructures,
188 including on-road and off-road paths with physical separation from vehicles, should be improved and
189 further developed.

190 In France, as in most countries, the use of active transportation in youth is primarily assessed
191 through surveys related to school, the full spectrum of active commuting opportunities should be
192 considered (travels to parks, leisure activities, shopping, etc.).

193 Although the grade attributed to this indicator improved between 2016 and 2018, progressing from
194 “D” to “C-”, the 2020 RC expert panel collectively considered that the lack of new evidence, as well as
195 the distance and perspective regarding the actions/strategies initiated did not allow us to modify this
196 grade and maintained the grade “C-”.

197

198 ***Sedentary Behaviors: D-***

199 Nearly 3 of every 4 French school-aged children exceed the recommended limit of 2 hours of screen
200 exposure per day, with half of children reaching at least 3.5 hours per day and 10% exceeding 6 hours
201 per day. During weekends, 93% of these children exceed 2 hours of screen time per day, 50% reach
202 at least 6 hours, and 10% reach more than 11 hours. These data collected among school children and
203 adolescents confirm the alarming situation captured in national surveys^{22,23} indicating that French
204 children and adolescents spend an average of 4 hours per day in front of a screen. Only 28.3% of
205 boys and 41.5% of girls aged 6-10 years old, 16.3% of boys and 17.3% of girls aged 11-14 years, and
206 2.6% of boys and 13.7% of girls aged 15-17 years old meet the guidelines for less than 2 hours per
207 day in front of screens^{20,22,23}.

208 While the present surveys predominantly ask about the use of TV, computers, and video games, our
209 national surveys should also include tablets and smartphones in their evaluations. Moreover, there is
210 a clear need at the national and international level to develop a reliable and validated questionnaire
211 to better evaluate this sedentary time and its characteristics (frequency, duration, and timing during
212 the day). These alarming statistics highlight an urgent need for policies aimed at decreasing
213 recreational screen time among youth, but also to better educate the general population about the
214 deleterious short and long term effects of sedentary time across the lifespan. Due to the lack of new
215 or higher quality data since the 2018 RC expert panel downgraded this indicator from “D” (2016) to
216 “D-” (2018), the 2020 grade for sedentary behaviors remains “D-”.

217

218 ***Physical Fitness: D***

219 While this indicator was not evaluated as part of the first 2016RC, the 2018 expert panel noted that
220 French children and adolescents had a moderately good overall physical fitness and attributed the
221 grade “B-” to the indicator. This evaluation was based on data collected among a large sample of
222 children and youth aged 10-15 years old, between 2009 and 2013²⁴. Although our 2018RC clearly
223 underlined the need for updated and more systematic evaluation of this indicator, limited recent

224 data were available for the current evaluation process. Recent findings describe changes in muscle
225 strength, cardiorespiratory endurance, speed, agility, and coordination between 2010 and 2013 of
226 516 children who were 7.7 ± 0.4 years old at the start of the study ²⁵. These results show a significant
227 reduction of the overall fitness of the kids who maintained a healthy weight from 2010 to 2013.
228 Children who were initially healthy weight in 2010 but who developed overweight in 2013 show a
229 significant reduction of their cardiorespiratory fitness, agility, and coordination. Coordination and
230 agility were significantly reduced among children who initially had overweight/obesity in 2010 and
231 achieved a healthy weight by 2013. Finally, overall fitness was significantly reduced among those
232 who had persistent overweight/obesity from 2010 to 2013 (ref). Although these results were
233 published in 2020, the data were collected between 2010 and 2013, and no more recent strong
234 evidence was available. Based on these alarming results and observations made in the RC2018,
235 coupled with the lack of new data, the expert panel makes an urgent call for new national fitness
236 evaluation campaigns on a regular basis. Physical fitness in children and adolescents is a determinant
237 of physical and mental health and strongly associated with long-term health outcomes as they age
238 into adulthood. We herein highlight the need for national campaign and educational strategies for
239 children and families, in combination with environmental approaches to promote physical activity
240 and then fitness. Altogether, these observations led the 2020RC expert panel to attribute the grade
241 of “D” to this indicator.

242

243 ***Family and Peers: D-***

244 The two previous edition of the RC (2016-2018) based their analysis on only two regional studies that
245 examined the physical activity level of parents ^{26,27}, and clearly concluded that the level of available
246 evidence was not complete enough to attribute a letter grade to the Family and Peers indicator
247 (“NC”). There have been some new studies investigating the role of parents and peers on children’s
248 physical activity since the last evaluation ²⁸⁻³¹. One study found that the physical activity level of

249 French adolescents is positively associated with the perception of their parents' activity levels
250 (Langlois, Omorou, Vuillemin, Briançon, & Lecomte, 2017). Another study conducted among football
251 players and coaches also underlines the role played by children's sport instructors or coaches (Van
252 Hoye, Heuzé, Van den Broucke, & Sarrazin, 2016). In that study the engagement and implication in
253 youth's practice of sport is positively associated with the reported reinforcement of theirself-esteem,
254 respect of others, and pleasure by coaches (Van Hoye, Heuzé, Van den Broucke, & Sarrazin, 2016). As
255 already noted in the 2018 RC, evidence shows that higher family socio-economic status is associated
256 with higher physical activity and lower sedentary time in children and adolescents ²².
257 Although the expert panel upgraded this indicator to "D-" for the 2020 edition of the RC, they
258 collectively recommend additional work in this area. We must also disseminate more information
259 regarding the role of parents and peers on children and adolescent's health behaviors. Importantly,
260 parent and peer influence can come in the form of education, but also through simply modeling
261 health behaviors and providing social support during activities.

262

263 School: B-

264 As previously detailed in the two previous iterations of France's Report Card, three hours per week of
265 physical education (PE) are recommended nationally for children attending primary schools (6-10
266 years-old). In secondary schools (11-14 years-old), PE covers four hours per week in grade 6 students
267 and three to four hours per week in older students. High school students (15-18 years old) get two
268 hours per week of PE. The 2020RC notes the recurrent and alarming issue of PE exemption. In 2019, a
269 national survey reported the permanent exemption rates for about 8.5% of girls following a
270 professional curriculum. This report also indicates that this permanent exemption rate is at least
271 twice as high in girls compared with boys ³². While these statistics concerned children and
272 adolescents that do not practice PE at all, further evaluations of temporary and partial exemption
273 and the reasons for these assignments are needed. In addition to the PE lessons included school
274 curricula, extra-curricular physical activities are offered to students. In elementary and primary

275 school children, 20% and 80% of pupils engaged in these extra-curricular activities, respectively,
276 which corresponds to 12.4% of the student population. In 2018-2019, a total of 1,179,261 secondary
277 school students are engaged in extra-curricular physical activities, 41.75% girls and 58.25% boys,
278 which corresponding to a decline of 0.67% compared to the previous year. The number of licenses
279 declined more sharply in older students ³³. Further research is needed to better understand the
280 decline of the youth involvement in PE and school-based activities with age, especially among girls.
281 We reinforce the recommendations from 2016 and 2018. As in 2018, we collectively believe that the
282 school environment could be an ideal setting to promote overall physical activity and to create a
283 culture of healthy movement behaviors beyond those that take place at school. We encourage the
284 continued development of new school policies to increase physical activity opportunities and ensure
285 that a greater proportion of youth would meet the WHO's physical activity guidelines. Four national
286 programs will encourage the participation in weekly physical activities leading up to the Olympic
287 games of 2024 in Paris. This kind of initiative should be promoted more strongly. There is an
288 increasing body of evidence clearly showing the feasibility and beneficial effects of active classrooms,
289 using activity breaks or active desks, and more field experiments should be conducted to properly
290 evaluate their effectiveness. In line with the two previous RC underlining the central and crucial role
291 played by the school setting on physical activity in youth (with a grade of "B" in both 2016 and 2018),
292 the 2020RC expert panel attributed the "B-" grade to this indicator.

293

294 ***Community and Environment: F***

295 As in the previous RC, most of the available evidence regarding this indicator relates to cycling paths.
296 In 2019, 1.36km per 1000 inhabitants have been created or rearranged, compared to 1.0 km per
297 1000 in 2016. A total of 66% of public roads have now a speed limit of 30 km/h to improve the safety
298 of cycle users, and 26% of the roads with a speed limit of 50 km/h are equipped with physically
299 identified cycling paths (enquête CVCT, 2019 (ref). Approximately 40% of current cyclists report that

300 the local safety conditions have positively improved between 2017 and 2019. This finding varies
301 depending on the size of the city, with 27% of cyclists in cities of less than 20,000 inhabitants, and
302 56% of cyclists in cities above 200,000 habitants (Baromètre 2019 des villes cyclables de la FUB).
303 According to the Cycling Cities and Territory Club (CVTC), the budget dedicated to the development
304 of a “cycling strategy” by urban collectivity increased from 7.32 euros per inhabitant in 2016 to 9.26
305 euros per inhabitant in 2019. In 2019, 91% of their city members had a specific and official plan for
306 increased cycle use, versus 83% in 2016. While these efforts are encouraging, they must be sustained
307 to promote the use of cycles in urban areas. We need more evaluations on the progression of sports
308 facilities, playground areas, and green areas, as noted in the previous editions of the RC. While the
309 development of cycling facilities and opportunities is an important source of physical activity at the
310 community level, other types of community programs and infrastructure should be developed. As
311 part of the heritage strategy of the 2024 Paris Olympic Games, the organizing committee has created
312 a working group to develop new “active designs” for sport infrastructures and public spaces, with a
313 goal to enhance physical activity in the general population. The 2016 and 2018 RC had insufficient
314 evidence to assign a letter grade to the Community and Environment indicator. This year, the “F”
315 grade has been , highlighting the need for new interventions and projects with appropriate
316 assessment to improve this RC evaluation. The 2020 RC committee and the French ONAPS call for
317 action and new initiatives to promote PA at the community level, and for collection of qualitative and
318 quantitative data on the response to these efforts.

319

320 Government: C

321 New national plans and strategies have been developed since 2018 to promote physical activity and
322 combat excessive sedentary behaviors from the youngest age. The 2018-2022 National Health
323 Strategy includes the promotion of a regular physical activity coupled with a reduction in sedentary
324 time as one of its objectives. It includes a specific section focusing on health in youth, with particular

325 attention to the excessive use of screens in young people. The Priority Prevention Plan that started in
326 2018 also considers regular physical activity as a primary strategy to fight pediatric
327 overweight/obesity and related complications. Three main actions related to physical activity are
328 part of this plan: i) swimming lessons from the youngest age; ii) cycling lessons; iii) curriculum
329 development combining school classes in the morning with physical practice in the afternoon. The
330 first two axes were established to guarantee that children can swim and bike safely (as two modes to
331 improve PA), while the afternoon activities are implemented to help youth discover new activities
332 and improve fitness. An inter-ministries National Sport and Health Strategy 2019-2024 has been
333 developed, aiming at creating a national culture of health movement behaviors. One the main
334 missions is to develop the practice of physical activity among school children. In 2019, the fourth
335 National Nutrition and Health Plan was launched (PNSS 2019-2023), including several objectives for
336 the promotion and encouragement of active mobility, overall physical activity, physical education,
337 and a reduction of sedentary behaviors in children and parents. These efforts led to several
338 initiatives, including the deployment of the formerly evaluated ICAPS program ^{34,35}, as well as the
339 creation of a “2024 Generation label” in conjunction with the organization of the 2024 Olympic
340 Games in Paris.

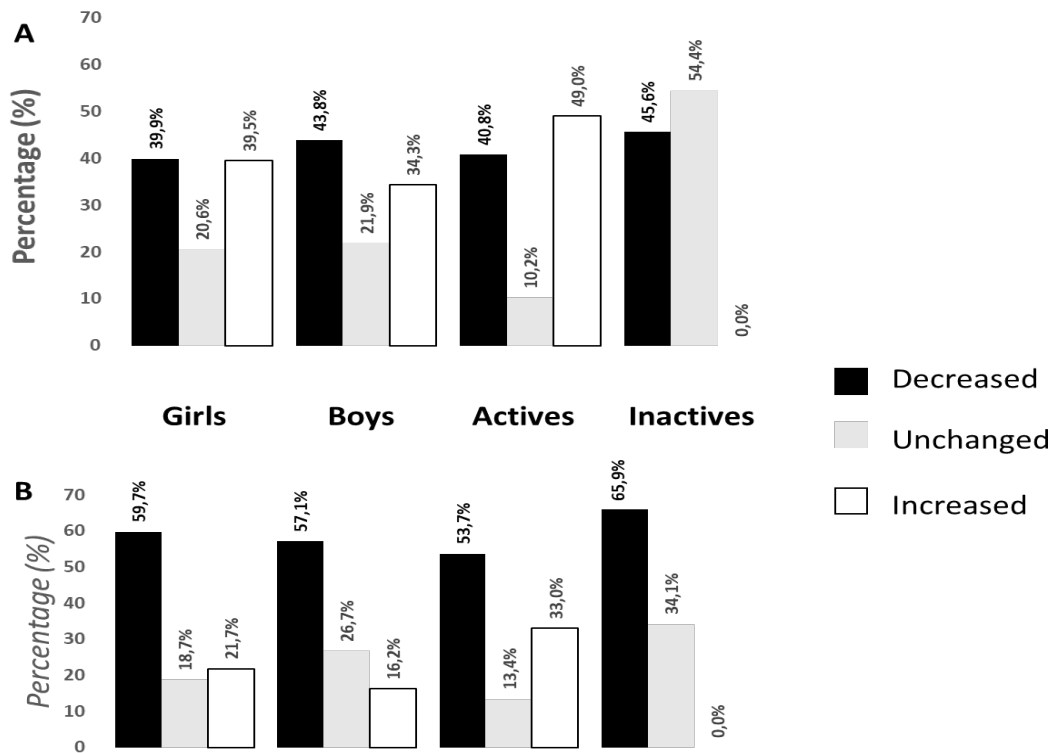
341 As noted in 2018, there is still a lack of data to quantify the level of leadership and commitment from
342 the French government in providing physical activity opportunities for all youth. Although several
343 actions and plans have been initiated and launched, the evaluation of effectiveness and cost-benefit
344 analysis is still to be determined. The grade for this indicator improved from “INC” to “C” from 2016
345 to 2018, and our 2020 expert panel decided to maintain the “C” grade. We are hopeful for objective
346 evaluation of these national initiatives for our next edition.

347

348 **2020: Year of the COVID-19 confinements.**

349 The addition of a 2020 RC for physical activity and sedentary behaviors must consider the unique
350 situation generated by the COVID-19-related confinements, having significantly affected movement
351 behaviors. The ONAPS, in the early days of the first confinement (March 2020), launched a national
352 survey examining the potential changes induced by the lock-down on population-level physical
353 activity and sedentary behaviors ³⁶. Complete data were collected for 22,895 participants, including
354 1588 6-10 year olds, 4903 adolescents (11-18 year olds) and 348 children below 6 years old. Among
355 very young kids (below 6 years), 50.3% increased their physical activity levels during confinement,
356 25% decreased, and 24.7% maintained their PA levels. The access to an outdoor area was positively
357 associated with the maintenance or increase in physical activity ³⁷. However, 60.4% of these young
358 children increased their screen time, and 51% of parents reported that this increased screen
359 exposure was linked to the necessity to work from home ³⁷. About 42% of children 6-10 years and
360 58.7% of adolescents decreased physical activity during the confinement, a decline that was more
361 pronounced among initially active youth. The Figure 2 illustrates these changes among children and
362 adolescents 6 to 17 years old who were initially active and inactive. Concerning screen time, 62% of
363 6-10 year old children and 68.9% of adolescents experienced an increase in exposure to screens ³⁸.

364



365

366 **Figure 2:** Declared evolution of the physical activity level of 6-10 years old (A) and 11-17 years old
 367 (B) children and adolescents during the first 2020 French COVID-19 related confinement (according
 368 to Chambonnière et al., 2021).

369

370 While these results are in line with what has been observed at the international level, they also
 371 highlight the fact that being active does not prevent children and adolescents from other deleterious
 372 effects of such a confinement period. Recommendations have been formulated by the ONAPS in the
 373 likely event of additional lock-downs in the future ³⁹. We must ensure that the behavioral changes
 374 induced by such periods do not worsen the alarming prevalence of physical inactivity and sedentary
 375 behaviors in youth.

376

377 **Conclusions**

378 The 2020 French Report Card expert panel presents a third edition of the Report Card following its
 379 2016¹⁵ and 2018¹⁶ evaluations. While insufficient data remained available to grade the Active Play
 380 indicator, all others were graded. This allowed us to evaluate three new indicators which could not
 381 previously be rated (Active Play, Family and Peers, Community and Environment). Based on our 2020
 382 analysis, while most of the indicators show a relative stagnation of their evaluation (as shown in table
 383 X), physical fitness has been downgraded from “B-” to “D” due to the lack of updated evidence.
 384 Although stable, our conclusions remain that levels of physical activity and sedentary behaviors
 385 among French children and youth are very concerning (with respective grades of “D” and “D-”).
 386 Despite slight grade changes on individual metrics, the overall 2020RC grade remains stable
 387 compared to our 2018 edition with “C-” (RC2016 “D”). The next coordinated Global Matrix 4.0 will be
 388 launched in 2022, allowing for international comparison at that time.

389 The present evaluation of PAL and SB did not consider the context of the COVID-19 confinement that
 390 dramatically affected both indicators in French children and adolescents, similarly to findings
 391 reported at the international level. We confirm the urgent need for efficient public health strategies,
 392 developed and implemented at the national level, to address this physical inactivity crisis. National
 393 plans and strategies have been developed and launched to promote overall PA and fight against
 394 excessive sedentary behaviors since our previous RC edition, and we collectively hope that their
 395 evaluation will provide us with positive results supporting improvements of our kids’ movement
 396 behaviors.

397

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405 **References**

- 406 1. Poitras VJ, Gray CE, Borghese MM, et al. Systematic review of the relationships between
407 objectively measured physical activity and health indicators in school-aged children and youth.
408 *Appl Physiol Nutr Metab.* 2016;41(6 Suppl 3):S197-239. doi:10.1139/apnm-2015-0663
- 409 2. Janssen I, Leblanc AG. Systematic review of the health benefits of physical activity and fitness in
410 school-aged children and youth. *Int J Behav Nutr Phys Act.* 2010;7:40. doi:10.1186/1479-5868-7-
411 40
- 412 3. Brodersen NH, Steptoe A, Boniface DR, Wardle J. Trends in physical activity and sedentary
413 behaviour in adolescence: ethnic and socioeconomic differences. *Br J Sports Med.*
414 2007;41(3):140-144. doi:10.1136/bjism.2006.031138
- 415 4. Kalman M, Inchley J, Sigmundova D, et al. Secular trends in moderate-to-vigorous physical
416 activity in 32 countries from 2002 to 2010: a cross-national perspective. *Eur J Public Health.*
417 2015;25 Suppl 2:37-40. doi:10.1093/eurpub/ckv024
- 418 5. Booth VM, Rowlands AV, Dollman J. Physical activity temporal trends among children and
419 adolescents. *J Sci Med Sport.* 2015;18(4):418-425. doi:10.1016/j.jsams.2014.06.002
- 420 6. Dollman J, Norton K, Norton L. Evidence for secular trends in children's physical activity
421 behaviour. *Br J Sports Med.* 2005;39(12):892-897; discussion 897.
422 doi:10.1136/bjism.2004.016675
- 423 7. Guthold R, Stevens GA, Riley LM, Bull FC. Worldwide trends in insufficient physical activity from
424 2001 to 2016: a pooled analysis of 358 population-based surveys with 1.9 million participants.
425 *Lancet Glob Health.* 2018;6(10):e1077-e1086. doi:10.1016/S2214-109X(18)30357-7
- 426 8. Sigmund E, Sigmundová D, Badura P, Kalman M, Hamrik Z, Pavelka J. Temporal Trends in
427 Overweight and Obesity, Physical Activity and Screen Time among Czech Adolescents from 2002
428 to 2014: A National Health Behaviour in School-Aged Children Study. *Int J Environ Res Public*
429 *Health.* 2015;12(9):11848-11868. doi:10.3390/ijerph120911848
- 430 9. Bucksch J, Sigmundova D, Hamrik Z, et al. International Trends in Adolescent Screen-Time
431 Behaviors From 2002 to 2010. *J Adolesc Health.* 2016;58(4):417-425.
432 doi:10.1016/j.jadohealth.2015.11.014
- 433 10. Corder K, Sharp SJ, Atkin AJ, et al. Change in objectively measured physical activity during the
434 transition to adolescence. *Br J Sports Med.* 2015;49(11):730-736. doi:10.1136/bjsports-2013-
435 093190
- 436 11. Colley RC, Brownrigg M, Tremblay MS. A model of knowledge translation in health: the Active
437 Healthy Kids Canada Report Card on physical activity for children and youth. *Health Promot*
438 *Pract.* 2012;13(3):320-330. doi:10.1177/1524839911432929

- 439 12. Tremblay MS, Barnes JD, Cowie Bonne J. Impact of the Active Healthy Kids Canada report card: a
440 10-year analysis. *J Phys Act Health*. 2014;11 Suppl 1:S3-S20. doi:10.1123/jpah.2014-0167
- 441 13. Tremblay MS, Gray CE, Akinroye K, et al. Physical activity of children: a global matrix of grades
442 comparing 15 countries. *J Phys Act Health*. 2014;11 Suppl 1:S113-125. doi:10.1123/jpah.2014-
443 0177
- 444 14. Tremblay MS, Barnes JD, González SA, et al. Global Matrix 2.0: Report Card Grades on the
445 Physical Activity of Children and Youth Comparing 38 Countries. *J Phys Act Health*. 2016;13(11
446 Suppl 2):S343-S366. doi:10.1123/jpah.2016-0594
- 447 15. Aucouturier J, Ganière C, Aubert S, et al. Results From the First French Report Card on Physical
448 Activity for Children and Adolescents. *J Phys Act Health*. 2017;14(8):660-663.
449 doi:10.1123/jpah.2017-0046
- 450 16. Aubert S, Aucouturier J, Ganière C, et al. Results from France's 2018 Report Card on Physical
451 Activity for Children and Youth. *J Phys Act Health*. 2018;15(S2):S360-S362.
452 doi:10.1123/jpah.2018-0511
- 453 17. Aubert S, Aucouturier J, Vanhelst J, et al. France's 2018 Report Card on Physical Activity for
454 Children and Youth: Results and International Comparisons. *J Phys Act Health*. 2020;17(3):270-
455 277. doi:10.1123/jpah.2019-0241
- 456 18. Aubert S, Barnes JD, Abdeta C, et al. Global Matrix 3.0 Physical Activity Report Card Grades for
457 Children and Youth: Results and Analysis From 49 Countries. *J Phys Act Health*. 2018;15(S2):S251-
458 S273. doi:10.1123/jpah.2018-0472
- 459 19. Ward MR, Tyler R, Edwards LC, Miller MC, Williams S, Stratton G. The AHK-Wales Report Card
460 2018: Policy Measures - is it possible to "score" qualitative data? *Health Promot Int*. Published
461 online November 9, 2020. doi:10.1093/heapro/daaa118
- 462 20. Verdot C, Salanave B, Deschamps V. Activité physique et sédentarité dans la population
463 française. Situation en 2014- 2016 et évolution depuis 2006-2007. *Bull Epidémiol Hebd*.
464 2020;(15):296-304.
- 465 21. Inchley J, Currie D, Budisavljevic S, Torsheim T, Jåstad A, Cosma A et al., editors. Spotlight on
466 adolescent health and well-being. Findings from the 2017/2018 Health Behaviour in School-aged
467 Children (HBSC) survey in Europe and Canada. International report. Volume 2. Key data. Copenhagen:
468 WHO Regional Office for Europe; 2020.
- 469 22. Équipe de surveillance et d'épidémiologie nutritionnelle (Esen). *Étude de Santé Sur*
470 *l'environnement, La Biosurveillance, l'activité Physique et La Nutrition (Esteban), 2014-2016.*
471 *Volet Nutrition. Chapitre Corpulence. 2e Édition.* Santé publique France; 2020:1-58.
472 www.santepubliquefrance.fr
- 473 23. Anses. INCA 3 en image - Les Français, l'activité physique et la sédentarité | Anses - Agence
474 nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail. Accessed
475 January 13, 2021. <https://www.anses.fr/fr/content/inca-3-en-image-les-fran%C3%A7ais-lactivit%C3%A9-physique-et-la-s%C3%A9dentarit%C3%A9>
- 477 24. Vanhelst J, Labreuche J, Béghin L, et al. Physical Fitness Reference Standards in French Youth:
478 The BOUGE Program. *J Strength Cond Res*. 2017;31(6):1709-1718.
479 doi:10.1519/JSC.0000000000001640

- 480 25. Vanhelst J, Ternynck C, Ovigneur H, Deschamps T. [Tracking of physical fitness during childhood:
481 Longitudinal findings from the Diagnoform program]. *Rev Epidemiol Sante Publique*.
482 2020;68(3):163-169. doi:10.1016/j.respe.2020.04.052
- 483 26. Thibault H, Contrand B, Saubusse E, Baine M, Maurice-Tison S. Risk factors for overweight and
484 obesity in French adolescents: physical activity, sedentary behavior and parental characteristics.
485 *Nutrition*. 2010;26(2):192-200. doi:10.1016/j.nut.2009.03.015
- 486 27. Wagner A, Klein-Platat C, Arveiler D, Haan MC, Schlienger JL, Simon C. Parent-child physical
487 activity relationships in 12-year old French students do not depend on family socioeconomic
488 status. *Diabetes Metab*. 2004;30(4):359-366. doi:10.1016/s1262-3636(07)70129-5
- 489 28. Bernal C, Lhuisset L, Fabre N, Bois J. School-Based Multi-component Intervention to Promote
490 Physical Activity and Reduce Sedentary Time of Disadvantaged Children Aged 6-10 Years:
491 Protocol for a Randomised Controlled Trial. *Journal of medical Internet Research Protocols*.
492 Published online in press.
- 493 29. Cousson-Gélie F, Carayol M, Fregeac B, et al. The “great live and move challenge”: a program to
494 promote physical activity among children aged 7-11 years. Design and implementation of a
495 cluster-randomized controlled trial. *BMC Public Health*. 2019;19(1):367. doi:10.1186/s12889-
496 019-6648-x
- 497 30. Langlois J, Omorou AY, Vuillemin A, Briançon S, Lecomte E, PRALIMAP Trial Group. Association of
498 socioeconomic, school-related and family factors and physical activity and sedentary behaviour
499 among adolescents: multilevel analysis of the PRALIMAP trial inclusion data. *BMC Public Health*.
500 2017;17(1):175. doi:10.1186/s12889-017-4070-9
- 501 31. Van Hoya A, Heuzé J-P, Van den Broucke S, Sarrazin P. Are coaches’ health promotion activities
502 beneficial for sport participants? A multilevel analysis. *J Sci Med Sport*. 2016;19(12):1028-1032.
503 doi:10.1016/j.jsams.2016.03.002
- 504 32. Eduscol. *L’évaluation Aux Baccalauréats, CAP et BEP de l’enseignement Général, Technologique*
505 *et Professionnel En Education Physique et Sportive.*; 2019.
506 <https://eduscol.education.fr/eps/examens/ComNat/rapport-cne-2019>
- 507 33. UNSS. *RAPPORT GÉNÉRAL 2018 - 2019.*; 2020. [https://unss.org/wp-](https://unss.org/wp-content/uploads/2020/02/RAPPORT_G%C3%89N%C3%89RAL_UNSS_2018_2019.pdf)
508 [content/uploads/2020/02/RAPPORT_G%C3%89N%C3%89RAL_UNSS_2018_2019.pdf](https://unss.org/wp-content/uploads/2020/02/RAPPORT_G%C3%89N%C3%89RAL_UNSS_2018_2019.pdf)
- 509 34. Simon C, Wagner A, DiVita C, et al. Intervention centred on adolescents’ physical activity and
510 sedentary behaviour (ICAPS): concept and 6-month results. *Int J Obes Relat Metab Disord*.
511 2004;28 Suppl 3:S96-S103. doi:10.1038/sj.ijo.0802812
- 512 35. Simon C, Wagner A, Platat C, et al. ICAPS: a multilevel program to improve physical activity in
513 adolescents. *Diabetes Metab*. 2006;32(1):41-49. doi:10.1016/s1262-3636(07)70245-8
- 514 36. Genin P, Dutheil F, Larras B, et al. Promoting physical activity and reducing sedentary time
515 among tertiary workers: Position Stand from the French National Observatory for Physical
516 Activity and Sedentary Behaviors (ONAPS). 2020 In press. *Journal of Physical Activity and Health*.
517 Published online in press.
- 518 37. Fillon A, Lambert C, Tardieu M, et al. Impact of the COVID-19 confinement on movement
519 behaviors among French young children (<6 years old): Results from The ONAPS national survey.
520 *Pediatric Minerva*. Published online under review.

- 521 38. Chambonnière C, Lambert C, Tardieu M, et al. Effect of the COVID-19 confinement on Physical
522 Activity and Sedentary Behaviors in French Children and Adolescents: new results from The
523 ONAPS national survey. *Pediatric Minerva*. Published online under review.
- 524 39. Thivel D, Tardieu M, Genin P, et al. COVID-19-related national re-confinement: recommendations
525 from the National French Observatory for Physical activity and Sedentary Behaviors (ONAPS).
526 *JPAH*. Published online under review.
- 527