# UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL FACULDADE DE ODONTOLOGIA

# ISABELA LORENZONI DREHER RAFAELA HERRMANN

INFLUÊNCIA DO INSTRUMENTO DE AVALIAÇÃO DE CONSUMO ALIMENTAR NA DETERMINAÇÃO DA DIETA CARIOGÊNICA DE ESCOLARES

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Trabalho de Conclusão de Curso apresentado ao Curso de Graduação em Odontologia da Faculdade de Odontologia da Universidade Federal do Rio Grande do Sul, como requisito parcial para obtenção do título de Cirurgião-Dentista.

Orientadora: Tathiane Larissa Lenzi.

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Orientadora: Tathiane Larissa Lenzi.

Porto Alegre, 10 de dezembro de 2019.

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#### **RESUMO**

O objetivo deste estudo foi investigar a influência do recordatório de 24 horas e do Questionário Alimentar do Dia Anterior (QUADA) na avaliação do consumo de alimentos com potencial cariogênico por escolares. Para isso, um estudo transversal foi realizado. A amostra de conveniência foi composta de 30 crianças cárie-ativas, de ambos os gêneros, com idade entre 7 e 10 anos, atendidas em 2019 na Clínica Infanto-Juvenil da Faculdade de Odontologia da Universidade Federal do Rio Grande do Sul e, suas respectivas mães, que não tenham recebido orientações dietéticas antes do estudo. Dois avaliadores previamente treinados aplicaram, de maneira independente, os instrumentos para avaliação do consumo de alimentos com potencial cariogênico. O QUADA foi aplicado às crianças e o recordatório de 24 horas foi aplicado às mães. Variáveis individuais e clínicas foram coletadas dos prontuários odontológicos, tais como: gênero, idade, experiência de cárie (ceo-d), frequência de escovação e índices de placa visível e sangramento gengival. Coeficiente de correlação intraclasse e respectivo intervalo de confiança foram calculados para determinar a concordância entre os instrumentos considerando a frequência de ingestão de açúcar. Análises bivariadas (teste de Mann-Whitney) foram realizadas para investigar os fatores associados à frequência de ingestão de açúcar com o uso do QUADA e do recordatório de 24 horas ( $\alpha$ =0,05). Uma moderada concordância entre os instrumentos foi encontrada (0,51 IC95% -0,04-0,77; p = 0,03). A frequência média de ingestão de açúcar relatada por mães e crianças foi de 3,5 (± 1,8) e 3,7 (± 1,5) vezes por dia, respectivamente. Com o uso do QUADA, a frequência de consumo de alimentos cariogênicos variou dependendo da frequência de escovação. Crianças que tiveram maior frequência de ingestão de açúcar escovaram seus dentes pelo menos duas vezes ao dia (p=0,016). Em conclusão, o Questinário Alimentar do Dia Anterior pode ser aplicado às crianças em idade escolar em associação com as informações fornecidas pelas mães quando intervenções dietéticas para controle da cárie dentária são necessárias.

Palavras-chave: Cárie Dentária. Criança. Desenvolvimento Infantil. Dieta Cariogênica.

#### **ABSTRACT**

The aim of this study was to investigate the influence of 24-hour recall and Previous Day Food Questionnaire (PDFQ) on the evaluation of consumption of foods with cariogenic potential by schoolchildren. For this, a cross-sectional study was performed. A convenience sample comprised of 30 caries-active children of both genders, aged between 7 and 10 years, attended in 2019 at the Children and Youth Dental Clinic of the School of Dentistry of the Federal University of Rio Grande do Sul and their mothers, who have not received dietary orientation before study. Two previously trained evaluators independently applied the instruments to assess the consumption of foods with cariogenic potential. The PDFQ was applied to children and the 24-hour recall was applied to mothers. Individual and clinical variables were collected from dental records such as gender, age, caries experience (dmft), toothbrushing frequency, and visible plaque and gingival bleeding indexes. Intraclass correlation coefficient and respective confidence interval were calculated to determine the agreement between the instruments considering the frequency of sugar intake. Bivariate analyzes (Mann-Whitney test) were performed to investigate factors associated with the frequency of sugar intake with the use of PDFQ and 24hour recall ( $\alpha = 0.05$ ). A moderate reliability (0.51 95%CI -0.04-0.77; p=0.03) was found between instruments. Mean frequency of sugar intake reported by mothers and children was 3.5 (± 1.8) and 3.7 (± 1.5) times a day, respectively. When using the PDFQ, the frequency of cariogenic foods consumption varied depending on frequency of toothbrushing. Children that had higher frequency of sugar intake brushed their teeth at least two times a day (p=0.016). In conclusion, the Previous Day Food Questionnaire may be applied with schoolchildren in association with reports of mothers when dietary interventions for controlling dental caries are necessary.

Keywords: Dental Caries. Child. Child Development. Diet, Cariogenic.

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### 1 INTRODUÇÃO

Sabe-se que doença cárie é multifatorial, complexa, de progressão contínua, biofilme-açúcar dependente e que ocorre através de alterações no processo de desmineralização-remineralização (CURY; TENUTA, 2009). A relação entre as práticas alimentares e a cárie dentária foi sugerida e reforçada desde os estudos clássicos realizados na década de 1950 (GUSTAFSSON *et al.*, 1954; WEISS; TRITHART, 1960).

Nos últimos 10 anos, evidências tem demonstrado que práticas alimentares, particularmente o consumo de açúcares livres, estão relacionadas com o desenvolvimento de cárie dentária, constituindo fator necessário para sua ocorrência, e modulando outros fatores, como o biofilme dental (PERES et al., 2016; SHEIHAM; JAMES, 2015).Os açúcares livres incluem monossacarídeos e dissacarídeos adicionados a alimentos e bebidas, e açúcares naturalmente presentes em mel, xaropes, sucos de frutas e concentrados de sucos de frutas (WORLD HEALTH ORGANIZATION, 2015).

Além do efeito direto na dissolução de minerais da estrutura dental, a alta frequência de exposição diária a açúcares fermentáveis modifica a ecologia do biofilme, tornando-o metabolicamente mais ativo. Além disso, se o açúcar em questão for a sacarose, a estrutura do biofilme também se modifica. Quanto maior a frequência de ingestão de açúcares livres, maior o risco de cárie dentária (GUSTAFSSON et al., 1954). Isso ocorre porque a produção repetida de ácido e a subsequente manutenção de pH muito baixo no biofilme impede a reposição fisiológica dos minerais perdidos da estrutura dentária nos ciclos de desmineralização/remineralização, favorecendo a desmineralização e o desenvolvimento de lesões de cárie. Sendo assim, a ingestão de açúcar deveria ser restrita às refeições principais (GUSTAFSSON et al., 1954).

Tem sido demonstrado que a frequência de ingestão de açúcares 3 vezes ao dia por pacientes que não usam dentifrício fluoretado é fator de risco para desenvolvimento de lesões de cárie. Por outro lado, a ingestão de carboidratos deve ser superior a 6 vezes ao dia para pacientes que usam dentifrício fluoretado (BURT; PAI, 2001). Embora o flúor tenha um papel importante na redução da prevalência da cárie, ele não pode anular fatores causais relevantes, como dieta cariogênica e

presença de biofilme dental. Assim, a restrição do consumo de açúcar continua sendo parte justificável do controle da atividade doença cárie (BURT; PAI, 2001).

A idade em que o açúcar é introduzido também é fator de risco para cárie dentária (CHAFFEE et al., 2015; FELDENS et al., 2018). Padrões dietéticos precoces podem influenciar a ecologia bacteriana, como o estabelecimento de *Streptococos* do grupo mutans, que é um forte preditor de futura incidência de cárie em crianças pequenas (WAN et al., 2003). Além disso, a exposição precoce ao açúcar pode influenciar a futura preferência por doces, resultando na adição crescente de açúcar a alimentos e bebidas (VENTURA; WOROBEY, 2013), o que pode contribuir para a experiência de cárie ao longo da vida. Neste sentido, recomenda-se que a introdução de açúcar na dieta seja postergada ao máximo, preferencialmente, após os 2 anos de idade da criança.

O reconhecimento do açúcar como um fator de risco comum para doenças não transmissíveis, sugere que a quantidade de ingestão de açúcar livre também deve ser objeto de intervenções (OMS, 2015). Há forte recomendação, baseada em evidência de moderada qualidade, que a ingestão de açúcares livres seja reduzida para menos de 10% da ingestão total de energia durante todo o ciclo de vida, visando redução de cárie dentária (OMS, 2015).

Para avaliação de práticas alimentares entre pré-escolares, o diário alimentar e o recordatório de 24 horas são frequentemente utilizados (FELDENS et al., 2010, RODRIGUES; SHEIHAM, 2000). Por meio do diário alimentar, o responsável anota, em formulários especialmente desenhados, todos os alimentos e bebidas consumidos ao longo de um ou mais dias, devendo registrar também os alimentos consumidos fora do lar. A maior limitação do diário alimentar é que o responsável tende a anotar apenas os alimentos consumidos nas refeições programadas e ignorar os consumidos entre as refeições. Isso poderia levar a um falso diagnóstico de que a dieta da criança não é um fator de risco para cárie dentária ou outro problema de saúde.

O recordatório de 24 horas consiste em definir e quantificar todos os alimentos e bebidas ingeridas no período anterior à entrevista, que podem ser as 24 horas precedentes ou, mais comumente, o dia anterior. Baseia-se na memória recente dos indivíduos e constitui-se de respostas abertas, o que permite obter um quadro mais detalhado do consumo, uma vez que captura a variedade dos alimentos ingeridos (SOARES *et al.*, 2008).

Na fase escolar, a criança deveria participar da avaliação dietética, contribuindo com as informações fornecidas. O profissional deve prestar atenção aos alimentos e bebidas consumidos especialmente durante os momentos de recreação da criança, muitas vezes, sem o conhecimento dos pais ou cuidadores.

Neste sentido, foi desenvolvida no Brasil uma ferramenta estruturada e ilustrada, denominada QUADA (Questionário Alimentar do Dia Anterior), baseada no recordatório do dia anterior que avalia o consumo alimentar e estado nutricional de escolares de 6 a 11 anos de idade (ASSIS et al., 2009). Instrumentos interativos exibem boa aceitabilidade entre crianças e adolescentes e proporcionam controle da qualidade das informações, auxiliando, inclusive, no processo cognitivo relacionado à memória para o relato dos alimentos (ILLNER et al., 2012). Embora o questionário seja um instrumento válido para avaliação do consumo alimentar de crianças e adolescentes (ASSIS et al., 2009), nenhum estudo prévio avaliou a ferramenta para avaliação de dieta cariogênica.

Sendo assim, o objetivo do presente estudo será investigar a influência do recordatório de 24 horas e do questionário QUADA na avaliação do consumo de alimentos com potencial cariogênico por escolares.

#### 2 ARTIGO CIENTÍFICO

# Can schoolchildren substitute mothers reports of cariogenic foods consumption?

Short title: Evaluation of cariogenic foods consumption

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#### Abstract

Purpose: To investigate the influence de two instruments for evaluation of cariogenic foods consumption by schoolchildren. Methods: The convenience sample comprised of 30 active-caries children (7-10 years old) attended in a public dental clinic and their mothers, who have not received dietary orientation before study. A trained evaluator administered the Previous Day Food Questionnaire (PDFQ) to children and other examiner applied the 24-hour dietary recall with mothers. Intraclass correlation coefficient was calculated to determine the reliability regarding frequency of sugar intake between PDFQ and 24-hour dietary recall. Bivariate analyses (Mann-Whitney Test) were performed to investigate the associated factors with frequency of sugar intake when using both instruments ( $\alpha$ =0.05). Results: A moderate reliability (0.51 95%CI -0.04-0.77; p=0.03) was found between instruments. Mean frequency of sugar intake reported by mothers and children was 3.5 (± 1.8) and 3.7 (± 1.5) times a day, respectively. When using the PDFQ, the frequency of cariogenic foods consumption varied depending on frequency of toothbrushing, i.e., children that had higher frequency of sugar intake brushed their teeth at least two times a day (p=0.016). Conclusion: Previous Day Food Questionnaire could be applied with schoolchildren in association with reports of mothers when dietary interventions for controlling dental caries are necessary.

Keywords: Cariogenic diet; Food consumption; Schoolchildren; Questionnaire

#### Introduction

Dental caries is a biofilm-mediated, sugar-driven, multifactorial disease that results in the imbalance of demineralization and remineralization of dental hard tissues<sup>1</sup>. Consumption of free sugars (i.e. sugars added to foods and drinks and sugars naturally present in honey, syrups, fruit juices, and fruit juice concentrates) is of critical importance to the development of dental caries<sup>2</sup>. A high frequency of intake of sugars leads to prolonged acid production from tooth adherent bacteria and to a shift in the composition of the oral microbiota and biofilm pH. If sustained, tooth structures are demineralized<sup>1</sup>.

Despite protective role of fluoride in the controlling dental caries, controlling sugar consumption still has a role to play in the prevention of the disease<sup>3</sup>. Moreover, dental caries shares common risk factors with other non-communicable diseases associated with excessive sugar consumption, such as obesity, and diabetes. Thus, the evaluation of dietary habits is essential in the Pediatric daily clinic.

The measurement of sugar intake is commonly based on food frequency questionnaire, diary or a 24-hour dietary recall<sup>4–6</sup>. Food diary is an inventory method in which the professional weighs all sugary foods and drinks consumed by children usually over the three-day period (including a weekend day). The major limitation is that the questionnaire is fill out by parents/guardians and they tends to inform only foods and drinks consumption during main meals, omitting those consumed between main meals<sup>6</sup>.

The 24-hour dietary recall is performed with parents/guardians of the child by interview. The report begin with foods and drinks consumed on the

previous day. The professional asks the questions, taking care not to induce answers, being possible to record items that the interviewee did not initially mention<sup>4</sup>.

Parents/guardians, oftentimes, are not able to provide complete information on food and drink intake during school hours, and children are too young to self-report or to fill meal frequency questionnaires<sup>7</sup>. In this sense, a structured and illustrated tool called *Previous Day Food Questionnaire* (PDFQ) was developed to measure food intake in children between six and eleven years old<sup>8</sup>. The questionnaire provides information on items such as the choice of food groups consumed on a typical day, considering 6 daily eating occasions<sup>8,9</sup>. The questionnaire was previously validated with a sample of Brazilian children and can be used for assessing food and meal patterns<sup>8</sup>. However, to the best of our knowledge, no previous study used this tool to investigate cariogenic foods consumption.

Therefore, this study aimed to investigate if there is correlation between schoolchildren and mothers reports on sugar intake frequency.

#### Methods

#### Ethical aspects

The local Research Ethics Committee approved the research protocol.

For the collection of data, the parents or guardians signed written informed consent. The personal information of the patients was kept confidential.

#### Sample collection

This cross-sectional study was conducted at the Children and Youth Dental Clinic, School of Dentistry, Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil. This public pediatric dental clinic treats children at a low charge, who are mainly from low socioeconomic backgrounds.

The convenience sample comprised of 30 active-caries children (7-10 years old), attended during 1-year period (2019), who have not received dietary orientation before study. Non-cooperative children or patients with compromised systemic health were excluded from the study. The participants were recruited by verbal invitation during routine dental appointments at the clinic.

#### Training of evaluators

Two examiners (I.L.D. and R.H.) underwent a total of 8 h of specific training session involving theoretical explanations about instruments for dietary evaluation and their application to five children and respective parents/guardians not involved in the study. The responsible for training session was a benchmark examiner (T.L.L.) with experience in cariogenic diet evaluation.

#### Dietary assessment

A trained evaluator administered (R.H.) the *Previous Day Food Questionnaire* (PDFQ)<sup>8</sup> to children and other examiner (I.L.D.) applied the 24-hour dietary recall with mothers. The evaluator systematically asked for each mother about all foods and drinks consumed by child on the previous day, taking care not to induce answers.

In the PDFQ8, children were asked to detail their food consumption on

the previous day at 6 daily eating occasions that were chronologically ordered (breakfast, mid-morning snack, lunch, afternoon snack, dinner, and evening snack), based on 21 drawings of selected foods or food groups: bread and biscuits, chocolate milk, coffee with milk, milk, yogurt, cheese, rice, soft drinks, sweets, salty snacks, French fries, pizza and hamburger, fruits, beans, pasta, fish and seafood, beef and poultry, fruit juices, leafy vegetables, cooked vegetables, and vegetable soup (Figure 1). The foods and food groups were chosen in order to take into account the food patterns of children in this age group, food presented in school menus and foods recommended in the guidelines for Brazilian population<sup>10</sup>.

Each child received a colored printed version of the questionnaire and a colored pencil. The examiner, using vocabulary and gestures appropriate for the age group, explained the purpose of each question and the procedure to be adopted for filling out the questionnaire. Furthermore, the children were asked whether they consumed other foods that were not included in the instrument and were instructed to write the name of the food on the part referring to the meal in question. The interviews were held independently with mothers and children, who had received no prior warning that they would be interviewed to avoid any changes in the dietary habits.

We classified the foods based on their densities of refined sugar or other simple carbohydrates and/or previously reported associations with caries in the literature<sup>11</sup>. The items categorized as cariogenic were: added sugar, sweets, chips, chocolate milk, coffee (sugar added), yogurt, soft drinks, and salty snacks.

#### Data collection

Both evaluators collected from clinical records the following individual and clinical characteristics: gender (boys or girls), child's age, brushing frequency (once a day or at least twice a day); flossing use (yes or no), visible plaque index (less or more than 20%)<sup>12</sup>, gingival bleeding index (less or more than 20%)<sup>12</sup>, and caries experience (decayed, missing, and filled teeth – dmft).

#### Statistical analysis

The descriptive analysis provides the distribution summary of the sample characteristics. Intraclass correlation coefficient and respective 95% confidence interval was calculated to determine the reliability between PDFQ and 24-hour dietary recall considering the frequency of sugar intake. The strength of agreement can be interpreted as follows: < 0.20: Poor; 0.21-0.40: Fair; 0.41-0.60: Moderate; 0.61-0.80: Good; 0.81-1.00: Excellent<sup>13</sup>.

Bivariate analyses (Mann-Whitney Test) were performed to investigate the associated factors with frequency of sugar intake when using PDFQ and 24-hour dietary recall. A significance level of 5% was considered. Data analyses were performed with SPSS software (SPSS Inc., version 22, Chicago, IL, USA).

#### Results

The sample was comprised of 30 children (15 boys and 15 girls) with average age of 8 years old (± 1.0 years), presenting a dmft index mean of 4.7 (± 3.4) and active carious lesions mean of 6.4 (± 3.4). All children used standard fluoride toothpaste (≥1,000 ppmF) and most them (90%) brushed their teeth at least two times a day. Clinical and demographic characteristics of children are

summarized in Table 1. All mothers had more than 8 years of formal education with average age of 29.1 years old (± 2.5 years).

Table 2 describes the feeding pattern of children reported by them and their mothers. Main sugar intake fonts reported by mothers and children were soft drinks and sweets. Fruit juices consumption was the most relevant divergence between children and mothers.

A moderate reliability (Intraclass Correlation Coefficient: 0.51 95%CI: -0.04-0.77; p=0.03) regarding frequency of sugar intake was found between PDFQ and 24-hour dietary recall. Mean frequency of sugar intake reported by mothers and children was 3.5 ( $\pm$  1.8) and 3.7 ( $\pm$  1.5) times a day, respectively (Table 3).

Bivariate analyses results are shown in Table 4. When using PDFQ, the frequency of cariogenic foods consumption varied depending on frequency of toothbrushing, i.e., children that had higher frequency of sugar intake brushed their teeth at least two times a day (p=0.016).

#### Discussion

This is the first study that used the PDFQ to analyze cariogenic foods consumption by schoolchildren. We investigated the correlation between mothers' report with 24-hour dietary recall and children' information using the PDFQ about sugar intake.

Both instruments consist of a single day recall about food consumption.

They are based on the recent memory of individuals, minimizing memory bias.

Despite these advantages, it is almost impossible to obtain the total food intake using both instruments. PDFQ was previously validated for evaluation of food

consumption of schoolchildren using the 24-hour dietary recall as reference method<sup>8</sup>.

The association between dental caries and a diet rich in sugary foods and drinks is well established in the scientific literature<sup>14</sup>. The relative contribution of the frequency versus the amount of sugar intake is difficult to discriminate because of the high correlation between frequency and amount. However, reducing the amount without reducing the frequency does not seem to be an effective caries preventive approach in contrast to the reciprocity<sup>14</sup>.

In our study, a moderate reliability (0.51 95%CI -0.04-0.77; p=0.03) was found between instruments regarding frequency of sugar intake. We speculated that a higher reliability would be observed if the sample was higher. Mean frequency of sugar intake reported by mothers and schoolchildren was 3.5 (± 1.8) and 3.7 (± 1.5) times a day, respectively. PDFQ limits the evaluation of frequency of sugar intake up to six times a day (breakfast, mid-morning snack, lunch, afternoon snack, dinner, and evening snack). Nonetheless, it is important to note that a higher proportion of children rather than mother reported cariogenic foods and drinks consumption 6 times a day (Table 3).

Main sugar intake fonts reported by mothers and children were soft drinks and sweets. On the other hand, consumption of bread and biscuits was more frequent by report of children than mothers. Children spend a large portion of the day in the school and mothers tend to inform only the foods and drinks consumption at home. Thus, the frequency of sugar intake may be underestimate by mothers' report. Moreover, foods pattern away from home is associated with a higher consumption of soft drinks, and lower consumption of fruits, vegetables and milk<sup>15</sup>. Fruit juices consumption was the higher

divergence between children and mothers. While 66.7% children reported to drink fruit juices, only 3.3% informed its consumption by children. This result is in line with the difference in the frequency of soft drinks consumption reported by children (53.3%) and mothers (76.7%). It may be explained because the many children do not know to differentiate natural and artificial fruit juices.

Dental caries has a long course of progression due to its accumulative nature. There was no statistically significant difference between frequency of sugar intake and caries experience (dmft). PDFQ and 24-hour dietary recall provide information about recent eating habits, which represents the most recent history of the condition while caries experience involves past history of the disease.

Children that had higher frequency of sugar intake, measured by PDFQ, brushed their teeth at least two times a day (p=0.016). An increase in the toothbrushing frequency may be a measure adopted by parents to compensate the higher frequency of cariogenic foods consumption. It is important to highlight that all children were caries-active and the majority them brushed their teeth at least two times a day. It has been shown that the use of fluoride by appropriate toothbrushing twice a day significantly reduces the association between caries and sugar intake<sup>3,14</sup>. Conversely, a previous study<sup>4</sup> demonstrated an increase in the prevalence rate of untreated dental caries in preschool children for each additional daily contact with cariogenic foods, independent of the brushing frequency (up to once day or more than once day).

Therefore, within the limitations of the study, PDFQ could be applied with schoolchildren in association with reports of mothers when dietary interventions for controlling dental caries are necessary.

#### Conclusions

Based on the results of this study, the following conclusions can be made:

The reliability between reports of schoolchildren and mothers regarding the frequency of cariogenic foods and drinks consumption was moderate.

Children that had higher frequency of sugar intake based on their reports also presented a higher toothbrushing frequency.

#### Conflict of interest

The authors declare no conflict of interest.

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# Legend of the figure

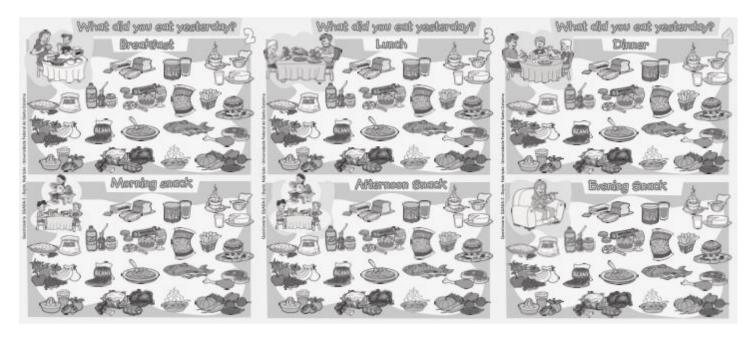


Figure 1. Previous Day Food Questionnaire.

**Table 1.** Distribution of the sample according to clinical and demographic characteristics

Variable	N (%)
Gender	
Girls	15 (50.0%)
Boys	15 (50.0%)
Frequency of brushing	
Once a day	3 (10.0%)
At least two times	27 (90.0%)
Visible plaque index	
< 20%	19 (63.3%)
> 20%	11 (36.7%)
Gingival bleeding index	
< 20%	17 (56.7%)
> 20%	13 (43.3%)
Caries experience (dmft)	
Until 3	15 (50.0%)
> 3	15 (50.0%)

**Table 2.** Distribution (%) of food choices and meals patterns reported by children and their mothers

Food groups	Children (n=30)	Mothers (n=30)
bread and biscuits	76.7%	56.7%
chocolate milk	60.0%	56.7%
coffee with milk	26.7%	23.3%
Milk	3.3%	3.3%
yogurt	6.7%	3.3%
cheese	3.3%	20.0%
Rice	76.7%	70.0%
soft drinks	53.3%	76.7%
sweets	73.3%	70.0%
salty snacks	3.3%	6.7%
French fries	0%	3.3%
pizza and hamburger	20.0%	6.7%
Fruits	46.7%	26.7%
beans	50.0%	50.0%
pasta	43.3%	30.0%
beef and poultry	86.7%	80.0%
fruit juices	66.7%	3.3%
leafy or cooked vegetables	30.0%	23.3%
vegetable soup	10.0%	10.0%

Table 3. Frequency of sugar intake reported by children and mothers

Frequency of sugar intake	Children (n=30)	Mothers (n=30)
1 time a day	3.2%	10%
2 times a day	10%	26.7%
3 times a day	26.7%	16.7%
4 times a day	26.7%	20%
5 times a day	16.7%	20%
6 times a day	16.7%	6.6%
Mean of daily frequency of cariogenic foods	3.7 (± 1.5)	3.5 (± 1.8)

**Table 4.** Associated factors with frequency of sugar intake when using PDFQ and 24-hour dietary recall

Variable		Frequency of sugar intake							
		PDFQ				24-hour dietary recall			
		Percentil		p-		Percentil		p-	
	25	50	75	value	25	50	75	value	
		(median)		*		(median)		*	
Gender									
Girls	3	3	4.5	0.420	2	3	5	0.800	
Boys	3.5	4	5		2	3	5		
Frequency of toothbrushing									
Once a day	0.5	1.0	2.0	0.016	2.5	3.0	3.0	0.439	
At least two times	3.0	4.0	5.0		2.0	4.0	5.0		
Visible plaque index									
< 20%	3.0	4.0	5.0	0.454	2.0	4.0	5.0	0.709	
> 20%	2.5	3.0	4.5		2.0	3.0	3.5		
Gingival bleeding index									
< 20%	3.0	4.0	4.0	0.535	2.0	4.0	5.0	0.551	
> 20%	3.0	4.0	5.0		2.0	3.0	4.0		
Caries experience (dmft)									
Until 3	3.5	4.0	5.0	0.121	2.5	5.0	5.0	0.063	
> 3	3.0	3.0	4.0		2.0	3.0	3.5		

### 3 CONCLUSÃO

A concordância entre o relato das mães através do recordatório de 24 horas e das crianças por meio do Questionário Alimentar do Dia Anterior sobre a frequência do consumo de alimentos cariogênicos foi moderada.

A frequência de consumo de alimentos cariogênicos, com base no relato das crianças, variou dependendo da frequência de escovação. Crianças que tiveram maior frequência de ingestão de açúcar escovaram seus dentes pelo menos duas vezes ao dia.

Sendo assim, o Questionário Alimentar do Dia Anterior poderia ser aplicado às crianças em idade escolar em associação com as informações fornecidas pelas mães quando intervenções dietéticas para controle da cárie dentária são necessárias.

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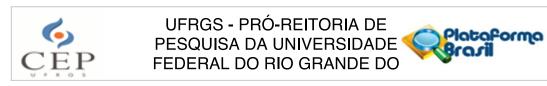
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### ANEXO A - Aprovação do Comitê de Ética em Pesquisa



#### PARECER CONSUBSTANCIADO DO CEP

#### DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Influência do instrumento de avaliação de consumo alimentar na determinação da dieta

cariogênica de escolares

Pesquisador: Tathiane Larissa Lenzi

Área Temática: Versão: 2

CAAE: 04269718.0.0000.5347

Instituição Proponente: Faculdade de Odontologia Patrocinador Principal: Financiamento Próprio

#### **DADOS DO PARECER**

Número do Parecer: 3.120.363

#### Apresentação do Projeto:

O projeto de pesquisa "Influência do instrumento de avaliação de consumo alimentar na determinação da dieta cariogênica de escolares" é coordenado pela Profa Tathiane Larissa Lenzi, e conta com a participação do Prof Luciano Casagrande, da Faculdade de Odontologia da UFRGS.

#### Objetivo da Pesquisa:

O objetivo geral do presente estudo será investigar a influência do instrumento utilizado para avaliação do consumo de alimentos com potencial cariogenico por escolares.

Os objetivos específicos serão:

- a) verificar se o questionário QUADA é um instrumento válido para avaliação do potencial cariogênico da dieta de escolares;
- b) comparar o tempo para avaliação da dieta cariogênica por meio da entrevista de 24 horas e do questionário QUADA;
- c) comparar as informações de escolares e seus responsáveis sobre o padrão alimentar.

#### Avaliação dos Riscos e Benefícios:

RISCOS: Segundo os pesquisadores, os participantes da pesquisa poderão sentir algum desconforto pelo tempo dedicado ao preenchimento do questionário. A fim de minimizar ou evitar quebra de sigilo, os participantes da pesquisa não serão identificados em nenhum momento, mesmo quando os resultados desta pesquisa forem divulgados em qualquer forma. Para isso, os

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mesmos serão identificados por meio de código numérico no banco de dados.

BENEFÍCIOS: Segundo os pesquisadores, como benefício decorrente da participação na pesquisa, os participantes receberão informações importantes sobre o consumo dos alimentos que causam cárie, proporcionando uma melhor avaliação do consumo desses alimentos a fim de prevenir essa doença.

#### Comentários e Considerações sobre a Pesquisa:

- Revisão de literatura e justificativa: adequadamente apresentadas.
- Objetivos: claros e consoantes com o método proposto.
- Desenho experimental: estudo transversal.
- Forma de recrutamento dos participantes: verificar pendências.
- Critérios de inclusão:
- a) participantes "responsáveis pelos pacientes infantis": acompanhantes dos participantes infantis, maiores de 18 anos (considerando-se os critérios estabelecidos pela Faculdade de Odontologia da UFRGS).
- b) participantes "infantis": pacientes cárie-ativos, de ambos os sexos, idade entre 7 e 10 anos, atendidos na Clínica Infanto-Juvenil da Faculdade de Odontologia da UFRGS, no primeiro semestre de 2019.
- Critérios de exclusão: crianças que se recusarem ou não colaborarem com a realização da pesquisa e crianças sistemicamente comprometidas.
- Tamanho amostral: Com base em dados dos pesquisadores, 50 pacientes cárie-ativos foram atendidos no segundo semestre de 2018. Assim: a) Etapa piloto: 5 participantes adultos + 5 participantes infantis; b) Etapa experimental: 50 participantes adultos + 50 participantes infantis. Número total de participantes 110.
- Procedimentos experimentais: aplicação do recordatório alimentar de 24 horas para o participante responsável pela criança; aplicação do questionário QUADA para o participante infantil; registro do tempo necessário para responder aos questionários; análise dos dados.
- Cronograma: a previsão para o início da fase experimental em 01/03/2019.
- Orçamento: R\$2.765,00, a ser custeado pelos pesquisadores.

#### Considerações sobre os Termos de apresentação obrigatória:

- Folha de Rosto: presente.
- Projeto de pesquisa: presente.
- Termo de concordância do responsável pelo Hospital de Ensino Odontológico da UFRGS: incluir.

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- Termo de anuência do regente da Clínica Infanto-Juvenil da Faculdade de Odontologia da UFRGS.
- Termo de Consentimento Livre e Esclarecido: presente, construído com linguagem adequada ao participante adulto. Há informações quanto aos procedimentos experimentais; riscos e benefícios; garantia de sigilo; garantia de desistência; contato da pesquisadora e do CEP-UFRGS. Verificar Pendências.
- Termo de Assentimento Livre e Esclarecido: presente. Verificar pendências.
- Formulário "Recordatório de 24 horas": presente.
- Instrumento de coleta de dados "Questionário Alimentar do Dia Anterior (QUADA)" presente.

## Conclusões ou Pendências e Lista de Inadequações:

Após a análise do protocolo de pesquisa e as respostas dos pesquisadores aos questionamentos, o mesmo pode ser APROVADO quanto aos aspectos de pesquisa em seres humanos, conforme as Resoluções 466/2012 e 510/2016.

#### PENDÊNCIAS ENCAMINHADAS EM PARECER ANTERIOR

- revisar o texto e substituir termos como "paciente", "indivíduos" por "participantes". ATENDIDO.
- Página 8, Aspectos éticos: indicar que os participantes infantis receberão também um TALE, onde poderão expressar a sua anuência em participar do estudo.
   ATENDIDO.
- Considerar no cálculo do tamanho amostral o número de participantes que integrarão a "Etapa Piloto" para treinamento dos pesquisadores. Esses grupos devem ser discriminados no Formulário de submissão à Plataforma Brasil. (Etapa piloto: 5 participantes adultos + 5 participantes infantis; Etapa experimental: 50 participantes adultos + 50 participantes infantis; número total de participantes 110). ATENDIDO
- Descrever como ocorrerá a abordagem para o recrutamento dos participantes, tais como o local, o momento, a forma (exemplo: convite verbal, cartaz).

  ATENDIDO.

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- Termo de Consentimento Livre e Esclarecido: os pesquisadores apresentaram um único TCLE direcionado aos pais, onde constam informações relacionadas à participação dos mesmos e dos pacientes infantis (adequado).
- a) retirar cabeçalho do termo; ATENDIDO
- b) reposicionar os parágrafos 1 e 2. O segundo parágrafo deve ser incluído no início do termo, pois é onde a pesquisa é apresentada aos responsáveis. ATENDIDO
- c) substituir a palavra "sujeito" por "participante". ATENDIDO
- d) na declaração de autorização para participação da pesquisa (parágrafo 5), a pesquisadora deve considerar que o responsável também deve consentir com a sua participação e não apenas do participante menor de idade. ATENDIDO
- e) indicar que o participante irá receber uma cópia do termo, assinada pela pesquisadora responsável. ATENDIDO
- f) retirar o número de documento de identidade do responsável. ATENDIDO
- Termo de Assentimento Livre e Esclarecido: considerando a idade dos participantes (7 a 10 anos), deve-se incluir um pequeno texto que explique a pesquisa e os seus objetivos, benefícios, riscos. Remover as palavras "do estudo autorizado pelo meu responsável legal", uma vez que se pode influenciar a liberdade de decisão do participante menor de 18 anos. Os campos para assinatura e os campos para assinalar (que contêm figuras do tipo emoji) estão adequadamente apresentados. Indicar que o participante irá receber uma cópia do TALE, assinada pela pesquisadora responsável.

#### ATENDIDO

- Incluir Termo de anuência do responsável pelo Hospital de Ensino Odontológico, disponibilizando a estrutura para a realização da pesquisa.

  ATENDIDO.
- Incluir anuência do professor regente da Clínica Infanto-Juvenil da Faculdade de Odontologia da UFRGS para a realização da pesquisa.
   ATENDIDO.
- Adequar a descrição de riscos no Formulário da Plataforma Brasil. Além do risco já indicado de forma adequada pelos pesquisadores, deve-se considerar a quebra de sigilo e as medidas a serem

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adotadas para minimizá-la.

ATENDIDO.

# Considerações Finais a critério do CEP:

Aprovado.

# Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas	PB_INFORMAÇÕES_BÁSICAS_DO_P	16/01/2019		Aceito
do Projeto	ROJETO_1273514.pdf	15:54:55		
Outros	Resposta.docx	16/01/2019	Tathiane Larissa	Aceito
		15:53:48	Lenzi	
Outros	Compesq.pdf	16/01/2019	Tathiane Larissa	Aceito
		15:53:12	Lenzi	
Projeto Detalhado /	Projeto_final.docx	16/01/2019	Tathiane Larissa	Aceito
Brochura		15:52:39	Lenzi	
Investigador				
Outros	Termo_anuencia.pdf	16/01/2019	Tathiane Larissa	Aceito
	·	15:52:12	Lenzi	
Declaração de	Termo_heo.pdf	16/01/2019	Tathiane Larissa	Aceito
Instituição e	·	15:51:27	Lenzi	
Infraestrutura				
TCLE / Termos de	TALE.docx	16/01/2019	Tathiane Larissa	Aceito
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Ausência				
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Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

Endereço: Av. Paulo Gama, 110 - Sala 317 do Prédio Anexo 1 da Reitoria - Campus Centro

Bairro: Farroupilha CEP: 90.040-060

UF: RS Município: PORTO ALEGRE



# UFRGS - PRÓ-REITORIA DE PESQUISA DA UNIVERSIDADE ' FEDERAL DO RIO GRANDE DO



Continuação do Parecer: 3.120.363

PORTO ALEGRE, 24 de Janeiro de 2019

Assinado por:
MARIA DA GRAÇA CORSO DA MOTTA
(Coordenador(a))

Endereço: Av. Paulo Gama, 110 - Sala 317 do Prédio Anexo 1 da Reitoria - Campus Centro

Bairro: Farroupilha CEP: 90.040-060

UF: RS Município: PORTO ALEGRE

# ANEXO B - Normas do periódico Journal of Dentistry for Children

# **AAPD Instructions for Authors**

#### **Pediatric Dentistry**

Pediatric Dentistry is the official publication of the American Academy of Pediatric Dentistry, the American Board of Pediatric Dentistry and the College of Diplomates of the American Board of Pediatric Dentistry. It is published bi-monthly and is internationally recognized as the leading journal in the area of pediatric dentistry. The journal promotes the practice, education and research specifically related to the specialty of pediatric dentistry. This peer-reviewed journal features scientific articles, case reports, and abstracts of current pediatric dental research.

#### Journal of Dentistry for Children

Acquired after the merger between the American Society of Dentistry for Children and the American Academy of Pediatric Dentistry in 2002, the *Journal of Dentistry for Children (JDC)* is an internationally renowned journal whose publishing dates back to 1934. Published three times a year, *JDC* promotes the practice, education and research specifically related to the specialty of pediatric dentistry. It covers a wide range of topics related to the clinical care of children, from clinical techniques of daily importance to the practitioner, to studies on child behavior and growth and development. *JDC* also provides information on the physical, psychological and emotional conditions of children as they relate to and affect their dental health.

#### Introduction

Manuscripts that are selected for publication promote the practice, education and research for the specialty of pediatric dentistry. Manuscripts are considered for publication only if the article, or any part of its essential substance, tables or figures have not been or will not be published in another journal or are not simultaneously submitted to another journal.

The statements, opinions, and advertisements are solely those of the individual authors, contributors, editors, or advertisers, as indicated. Published manuscripts do not necessarily represent the views of the editor, the AAPD Communications Department, or the American Academy of Pediatric Dentistry organization.

## **Types of Manuscripts**

Type of manuscript must be one of the following: Meta-Analyses/Systematic Reviews, Scientific Studies, Case Reports, or Literature Reviews (JDC only), Letters to the Editor, Editorials and Brief Communications.

## Meta-Analyses / Systematic Reviews

Authors of systematic reviews must adhere to Preferred Reporting Items for Systematic Reviews and Meta-Analyses, available at: 'http://www.prisma-statement.org/statement.htm'.

Structured Abstracts for systematic reviews are recommended. Headings should include: Research Question, Research Protocol, Literature Search, Data Extraction, Quality Appraisal, Data Analysis and Results, and Intrepretations of Results.

#### Scientific Studies

Full-length manuscript not to exceed 3,500 words (including structured Abstract, Introduction, Methods, Results, Discussion,

Conclusions, and Acknowledgments; excluding References and Figure Legends). The structured abstract should be no longer than 200 words and contain the following sections: Purpose, Methods, Results, and Conclusions. The Introduction section should include only pertinent references. The Methods section should be sufficiently detailed to replicate the study. The Results section should include only results and not discussion of the data. The Discussion section should discuss the results, of the present study and compare them to the existing knowledge base. The Conclusions section should consist of succinct, numbered statements that are supported by the results of the study. They should not repeat the Results section.

Maximum Figures: 4 • Maximum Tables: 3

#### Case Reports

Full-length manuscript not to exceed 1,850 words (including unstructured Abstract, brief Introduction, Description of Case, Discussion, Acknowledgments (if any), and References (if any). The unstructured Abstract should be no longer than 150 words.

Maximum Figures: 4 • Maximum Tables: 3

### Literature Reviews (JDC only)

Full-length manuscript not to exceed 2,500 words (including unstructured Abstract, Introduction, the Review of the Literature with appropriate subheading, Discussion, Conclusions, and Acknowledgments; excluding References). The unstructured Abstract should be no longer than 150 words.

Maximum Tables: 4

#### Letters to the Editor

Full-length manuscript not to exceed 350 words; excluding References.



Type of article	Abstract maximum length & type	Maximum text length	Maximum references	Maximum no. of figures	Maximum no. of tables	Notes
Meta-Analyses/ Systematic Reviews	200 words, structured	3,500 words	No limit	No limit	No limit	Inclusion of figures and tables will be at the Editor-in-Chief's discretion
Scientific Studies	200 words, structured	3,500 words	40	4	3	
Case Reports	150 words, unstructured	1,850 words	20	4	3	
Literature Reviews (JDC only)	150 words, unstructured	2,500 words	0	0	4	
Brief Communications	150 words, structured	2,000 words	20	2	2	
Letters to the Editor	none	350 words	8	0	0	
Editorials	none	1,000 words	40	2	2	Invited by the Editor-in-Chief

#### Editorials

Full-length manuscript not to exceed 1,000 words; excluding References and Figure Legends.

Maximum Figures: 2 • Maximum Tables: 2

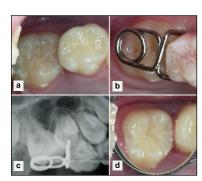
## Brief Communications

Full-length manuscript not to exceed 2,000 words (including structured *Abstract*; excluding *References* and *Figure legends*). The structured Abstract should be no longer than 150 words.

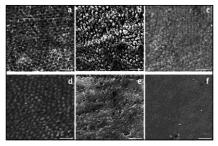
Authors desiring to have more Figures or Tables MUST agree to electronic publication of their manuscript, and must select this preference. Each separate chart, graph or photograph will be counted as a separate figure. Figures grouped together will be counted as their individual parts. See samples below:



3 Figures



4 Figures



6 Figures



#### **Manuscript Submission**

All new manuscripts must be submitted to AAPD's online submission and review website, ScholarOne Manuscripts; *Pediatric Dentistry* at: "http://mc.manuscriptcentral.com/pediadent"; *JDC* at: "http://mc.manuscriptcentral.com/jdentchild". Authors who do not yet have an account on the website should click the 'Create Account' link on the upper right-hand corner of the welcome page and follow the step-by-step process to open an account. On the dashboard page, authors should select the Author Center. In the Author Center, they should click the 'Click here to submit a new manuscript' link.

If you already have an account, enter your user ID and password and log in.

Manuscript submission guidelines for *Pediatric Dentistry* follow the 'uniform requirements for manuscripts submitted to biomedical journals' which have been developed by the International Committee of Medical Journal Editors (ICMJE). Please visit the ICMJE website at: "http://www.icmje.org/manuscript\_1prepare.html" for more information.

#### Author Information

The author must include each author's name, earned academic degrees, professional title (such as 'associate professor', 'chair'), work affiliations, complete address, telephone and fax numbers, and email address. In addition, each author should provide a statement of responsibility detailing what he or she contributed to the manuscript. These can be uploaded to the site as a Microsoft Word Document (it is recommended that statements from all authors be placed in a single document). No honorary designations such as 'FRCS', 'FICD', 'Diplomate', should be listed.

A submission with more than one author implies that each author contributed to the study or preparation of the manuscript. Only individuals who have made a significant contribution to the study or manuscript should be listed as authors. Contributors who do not meet the criteria for authorship, such as individuals who provided only technical help or writing assistance, should be listed in the Acknowledgments section at the end of the manuscript. The corresponding author should submit the following statement: "All authors have made substantive contribution to this study and/or manuscript, and all have reviewed the final paper prior to its submission."

Authors (including authors of letters to the editor) are responsible for disclosing all financial and personal relationships that might bias their work. If such conflicts exist, the authors must provide additional detail in the appropriate text box during online submission. Funding sources for the work being submitted must be disclosed in the *Acknowledgments* section of the manuscript.

Authors should express their own findings in the past tense and use the present tense where reference is made to existing knowledge, or where the author is stating what is known or concluded. Footnotes should be avoided and their content incorporated into the text. The editors reserve the right to revise the wording of papers in the interest of the journal's standards of clarity and conciseness.

The corresponding author will be asked to submit the names and email addresses of four preferred reviewers for their manuscript. Preferred reviewers should not be colleagues at the contributors' institution or present or former research partners.

Manuscripts will be published in English, using American spelling. Manuscripts must be submitted with proper English grammar, syntax, and spelling. Before submitting a manuscript for consideration authors may consider using a professional editing service such as: 'http://www.journalexperts.com'. AAPD does not endorse such service and use of such service has no relation with acceptance of a manuscript for publication.

Two versions of the manuscript must be uploaded, one version containing all the author information and one version without any information identifying the authors or their institutions. Tables should appear at the end of the main document, while photos, photomicrographs and graphs are to be submitted as separate files (.jpg or .tif format only). Do not embed tables, photos, figures or graphics in the text of the manuscript. Prior to submission, the corresponding author must guarantee that the article has not been published and is not being considered for publication elsewhere.

#### **Manuscript Preparation**

Authors are advised to review several recently published articles to familiarize themselves with proper format and requirements.

*Title:* Titles should be as brief as possible while clearly conveying the main point or purpose of the article. The manuscript title is limited to 20 words or less, and a short title limited to five words or less must also be submitted. All submissions, including titles and subheads, are subject to change during the editing process.

**Short Title:** Also refered as a 'Running Head', must be a brief but comprehensive phrase of what the paper is all about, or a brief version of the title of the paper. not to exceed 50 characters.

**Keywords:** A maximum of five keywords must be submitted. Authors should ensure that the keywords appear in the title and/or abstract and that they are PubMed searchable.

Abstract: All submissions must include an Abstract. An Abstract should be brief, providing the reader with a concise but complete summary of the paper. Generalizations such as 'methods were described' should not be used. Meta-analyses/Systematic Reviews and Scientific Studies should have a structured abstract of no more than 200 words with the following sections: Purpose, Methods, Results and Conclusions. Case Reports, Literature Reviews (IDC only) and Brief Communications should have an unstructured abstract of no more than 150 words.

*Introduction:* The introduction should provide the context for the article, the objective of the study, and should state the hypothesis or research question (purpose statement), how and why the hypothesis was developed, and why it is important. It should generally not exceed two or three paragraphs.

Methods: The Methods section should include as appropriate, a detailed description of the study design or type of analysis and dates and period of study; condition, factors, or disease studied; details of sample (eg study participants and the setting from which they were drawn); method of random sequence generation in detail (coin flip, random table, etc.); method of allocation concealment in detail (opaque envelopes, sequential numbered drug containers, etc); description of treatment providers; whether providers and participants were blinded; inclusion and exclusion criteria; intervention(s), if any; outcome measures; method of blinding of outcome assessors; method of standardization and calibration of outcome assessors, including kappa statistics; and statistical analysis.

**Results:** The results reported in the manuscript should be specific and relevant to the research hypothesis. Characteristics of the study participants should be followed by presentation of the results, from the broad to the specific. The *Results* section should not include implications or weaknesses of the study, but should include validation measures if conducted as part of the study. Results should not discuss the rationale for the statistical procedures used.

Discussion: The Discussion section should be a formal consideration and critical examination of the study. The research question or hypothesis should be addressed in this section, and the results should be compared to and contrasted with the findings of other studies. New results not previously reported in the Results cannot appear first in the Discussion. (Note: A lengthy reiteration of the results should be avoided.) The study's limitations and the generalizability of the results should be discussed, as well as mention of unexpected findings with suggested explanations. The type of future studies needed, if appropriate, should be mentioned.

**Conclusion:** The *Conclusion* should help the reader understand why the research should matter to them after they have finished reading the paper. Conclusions should be numbered, succinct statements that are supported by the results of the study. They should not repeat the Results section.

Acknowledgment: Funding and other sources of support must be disclosed in the Acknowledgment section. Personal acknowledgments should be limited to appropriate professionals who have contributed intellectually to the paper but whose contribution does not justify authorship.

References: References are a critical element of a manuscript and serve three primary purposes—documentation, acknowledgment, and directing or linking the reader to additional resources. Authors bear primary responsibility for all reference citations. References should be numbered consecutively with superscript Arabic numerals in the order in which they are cited in the text. A list of all references should appear at the end of the paper in numeric order as they are cited in the text. Journal abbreviations are those used by Index Medicus. The reference style to use is the recent edition of the American Medical Association Manual of Style.

The following are sample references:

#### **Journal**

For journals, list all authors when there are six or fewer; when there are seven or more, list the first three, then 'et al.' Page numbers should be included where possible. For example: 12-8, 191-5, 347-51

Bogert TR, García-Godoy F. Effect of prophylaxis agents on the shear bond strength of a fissure sealant. Pediatr Dent 1992;14(1):50-1.

#### Book

Bixler D. Genetic aspects of dental anomalies. In: McDonald RE, Avery DR, eds. Dentistry for the Child and Adolescent. 5th ed. Philadelphia: CV Mosby Co; 1987:90-116.

# Article, report, or monograph issued by a committee, institution, society, or government agency

Medicine for the public: Women's health research Bethesda, Md.: U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health; 2001. DHHS publication 02-4971.

#### World Wide Web

Websites and Web articles (URLs) should be cited as 'webcited'' references in the reference section at the end of the manuscript—do not include links to websites in the text. To webcite' a web reference means to take a snapshot of the cited document and to cite the archived copy (WebCite' link) in addition to the original URL. AAPD requires that authors use the free WebCite' technology (www.webcitation.org) to archive all cited web references first before they cite them. Provide the original URL, the WebCite' link and an access date.

American Academy of Pediatric Dentistry. AAPD Publications. Available at: "http://www.aapd.org/publications/". Accessed: 2015-03-20. (Archived by WebCite\* at: "http://www.webcitation.org/6XAypVwds")

Authors should provide direct references to original sources whenever possible. Avoid using abstracts or literature reviews as references. If possible, avoid references to papers accepted but not yet published. If such a citation is necessary, these papers should be cited as being 'In press', and verification that they have been accepted for publication must be provided. Where possible, references of easily accessible material are preferable to dissertations, theses, and other unpublished documents.

Authors should avoid citing 'personal communication' unless it provides essential information not available from a public source. Personal communications should not be numbered, but should be cited in the text as follows: (G. Seale, DDS, oral communication, March 2015). Authors should obtain written permission and confirmation of accuracy from the source of a personal communication; this permission should be uploaded in ScholarOne as a supplementary document at the time of manuscript submission. Authors should verify the accuracy of all references and are responsible for ensuring that no cited reference



contains material that was retracted or found to be in error subsequent to its publication.

#### **Editorial Style**

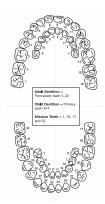
#### Text formatting:

- Manuscripts should be submitted as Office 2010 Microsoft Word format (.docx); Word .doc files are also accepted. No paper copy will be accepted.
- Double space all text.
- Use basic fonts such as Arial, Courier, Helvetica no smaller than 11 points.

Units of measure: Authors should express all quantitative values in the International System of Units (SI units) unless reporting English units from a cited reference. Figures and tables should use SI units, with any necessary conversion factors given in legends or footnotes. For most cases spell out numbers under 10, and use numerals for numbers 10 and above — this applies to all ages, days of the month, degrees of temperature, dimensions, percentages; proportions, scores, serial numbers, speeds, sums of money, time of day, and percent values. Numbers beginning a sentence should be spelled out. Report percentages to one decimal place (i.e., XX.X percent) when sample size is >=200. Laboratory data values should be rounded to the number of digits that reflects the precision of the results and the sensitivity of the measurement procedure.

Statistical tests: The results of all statistical comparisons should be reported to include the statistical test value and the associated P-value and confidence interval, if appropriate. Except when one-sided tests are required by study design, such as in non inferiority trials, all reported P-values should be two-sided. In general, P-values larger than 0.01 should be reported to two decimal places, those between 0.01 and 0.001 to decimal places. Actual P-values should expressed unless P<.001, in which case they should be so designated. Results in the abstract and the paper generally should include estimates of effect size and 95 percent confidence intervals, not just P-values or statements that a

difference was statistically significant.



Tooth names: The complete names of individual teeth should be given in full in the text of articles using the following convention: [(primary/ permanent), (maxillary/mandibular), (right/left), (central/lateral or first/ second/third), (tooth type)]. Examples: 'primary maxillary right first molar', 'permanent mandibular first molars', but 'mandibular right second pre-molar'. In tables these names may be abbreviated by the Universal system (A-T for primary teeth, 1-32 for permanent teeth).

Commercially-produced materials: Any mention of commercially produced materials, instruments, devices, software, etc., must be followed by the name of the manufacturer and the manufacturer's location in parentheses. Example: '... in an Excel spreadsheet (Microsoft, Inc, Redmond, Wash., USA).'

Abbreviations: Abbreviations should be used to make manuscripts more concise. The first time an abbreviation appears, it should be placed in bold in parentheses following the full spelling of the term [e.g., "...permanent first molars (PFMs)..."]

Permissions: For materials taken from other sources, a written statement from the authors and publisher giving permission to Pediatric Dentistry for reproduction must be provided. Waivers and statements of informed consent must accompany the manuscript when it is submitted for review. Waivers must accompany any photograph showing a human subject unless the subject's features are sufficiently blocked to prevent identification.

Human and animal subjects: Review of research involving human subjects is required by federal law. Federal laws and regulations regarding research on human subjects have specific requirements for Institutional Review Board (IRB) and study administration. The IRB must review research that involves the following areas, among others: medical and administrative record data; research that uses leftover tissues (eg. extracted teeth); health services research; survey research; behavioral research; biomedical and other clinical research. An official IRB-approval letter in English dated prior to the initiation of the research must be included with the submission. If the IRB has exempted the research from review, a copy of the letter of exemption must accompany the submission. Please state your IRB status on the title page. If applicable, the manuscript must state in the Methods section that the study was approved by an IRB or other institutional research ethics committee and identify the name and location of the institution housing the committee. When human subjects have been used, the text should indicate that informed consent was obtained from all participating adult subjects, and parents or legal guardians of minors or incapacitated adults. If required by the authors' institution, informed assent must have been obtained from participating children at or above the age specified by the institution. The cover letter for the manuscript must contain a statement similar to the following: "The procedures, possible discomforts or risks, as well as possible benefits were explained fully to the human subjects involved, and their informed consent was obtained prior to the investigation.'

Figures: Image resolution, after cropping to the area of interest, should be 300-600 dpi. Figures should be submitted individually as .jpg or .tif files. Each separate chart, graph or photograph will be counted as a separate figure. Figures grouped together will be counted as their individual parts. Photomicrographs must include a scale labeled with a convenient unit of length (e.g., 50 μm). Figures should be numbered in Arabic numerals in the order of the first citation in the text. Legends for each figure must be printed on a separate page. Include a key for symbols or letters used in the figures. Figures should be saved and submitted as a separate file. Figure legends should be understandable without reference to the text. A key for any symbols or letters used in the figure should be included. Abbreviations should be explained in a footnote to the figure. If illustrations, tables, or other excerpts are included from copyrighted works, the author is responsible for obtaining written permission from the copyright holder prior to submitting the final version of the paper. Full credit must be given to such sources with a superscript reference citation in the figure legend. Reference citations in figure legends or captions should follow numerically the reference number in the text immediately preceding mention of the figure. Figures take up additional page space and should be limited to those that add value to the text.

**Tables:** Tables should be double-spaced, appear on separate pages, and should be titled and numbered in Arabic numerals in the order of the first citation in the text. Short headings should appear at the top of each column. Explanatory matter should be placed in captions, not in the title. For footnotes, use the following symbols in this sequence: \*, \*\*\*, †, ‡, §. Tables should be understandable without alluding to the text. Due to space limitations, only tables adding value to the text should be included.

Copyright: All authors must agree to the terms of copyright transfer as indicated during the online manuscript submission process. The American Academy of Pediatric Dentistry owns the copyright for all content published in the journal. The AAPD and its licensees have the right to use, reproduce, transmit, derivate, publish, and distribute the content, in the journal or otherwise, in any form or medium. Authors will not use or authorize the use of the contribution without the AAPD's written consent, except as may be permitted as 'fair use' under U.S. copyright law. Authors represent and warrant to the AAPD that: the submitted manuscript is the authors' own original work; authors have the full right and power to make this copyright transfer; the work does not violate any copyright, proprietary, intellectual property or personal rights of others; the work is factually accurate and contains no matter defamatory or otherwise unwise unlawful; authors have not previously in any manner disposed of by sale or assignment any of the rights granted to the AAPD nor previously granted any rights adverse to or inconsistent with this copyright transfer; and that there are no rights outstanding which would diminish, encumber or impair the full enjoyment of the copyright transfer granted to the AAPD.

National Institutes of Health (NIH) Funded Manuscripts: Authors of studies funded by the NIH whose manuscripts are accepted for publication in either Pediatric Dentistry or the Journal of Dentistry for Children will have their final accepted version deposited to PubMed Central (PMC) by the publisher AAPD on behalf of the authors.

#### **Actions Taken on a Manuscript**

The following categories constitute the editorial actions that may be taken on a manuscript:

**Rejection:** The flaws that lead to this decision generally center on substantive or methodological issues. A manuscript is usually rejected because: it is outside the area of coverage of the journal; it contains serious flaws of design, methodology, analysis, or interpretation; or it is judged to make only a limited novel contribution to the field.

Revision: Manuscripts may have publication potential but are not yet ready for final publication. The study as presented may not merit acceptance as is but may warrant consideration after substantive revision (e.g., reorganizing the conceptual structure, conducting additional experiments, or modifying analyses). The action editor will give the author an invitation to revise and resubmit for another round of reviews (usually with the same reviewers). An editor cannot guarantee acceptance of a revised manuscript, but authors who respond flexibly and attend closely to suggested revisions enhance their chances for an acceptance. Authors must include a detailed cover letter outlining their responses to the revisions. Revisions must be submitted using Track Changes so the original with the sections deleted can be seen along with the new text.

Acceptance: When the reviewers and Editor have determined the revision is acceptable the author receives a letter of acceptance specifying an approximate time frame for anticipated publication. Once a manuscript is accepted, it enters the production phase of publication. At this point, no further changes can be made by the author other than those suggested by the copyeditor.

New scholars who wish to learn more about the editorial and peer review process as it operates with AAPD should e-mail the AAPD Headquarters Office at rgillmeister@aapd.org.



# **AAPD Manuscript Submission Checklist**

This checklist applies specifically to original research articles but much of it will apply to submission of other manuscript types, as well. Please see the section 'Types of Manuscripts' in the Instructions for Authors for complete information.

Submission Documents		Intro	oduction
0 0 0	Submit manuscript in .doc or .docx format.  Manuscript is double spaced.  Used basic fonts such as Arial, Courier, Helvetica no smaller than 11 points.		Provides context for the article. Provides objective of the study. Provides a clear purpose/hypothesis. Does not exceed two or three paragraphs.
	Two versions of the manuscript are be uploaded, one version containing all the author information and one version without any information identifying the authors or their institutions (blinded).  Tables appear at the end of the main document,		hods  As appropriate, includes a detailed description of the study design or type of analysis.
	while photos, photomicrographs and graphs are to be submitted as separate files (.jpg or .tif format only).  IRB approval, informed consent (verbal or written),		As appropriate, includes dates and period of study. As appropriate, includes condition, factors, or disease studied. As appropriate, includes details of sample (e.g.,
	HIPAA compliance (if from the United States), and/or animal care committee must be included with the submission.	_	study participants and the setting from which they were drawn).  As appropriate, includes method of random sequence generation in detail (coin flip, random
	IRB approval letters must be in English, on official IRB letterhead, and over an official signature of the IRB approval agent.	٠	table, etc.) As appropriate, includes method of allocation concealment in detail (opaque envelopes, sequential numbered drug containers, etc.)
Short Title			As appropriate, includes a description of treatment
	A brief but comprehensive phrase summarizing the paper.		providers.  As appropriate, includes whether providers and participants were blinded.
Keywords			As appropriate, includes inclusion and exclusion
	Five words that appear in the title/abstract, and searchable in PubMed.		criteria.  As appropriate, includes intervention(s), if any.  As appropriate, includes outcome measures.
Abstract			As appropriate, includes method of blinding of
0 0 0	The Abstract is brief, providing the reader with a concise but complete summary of the paper.  Date range of study should be given.  Number of patients/animals (including age and		outcome assessors.  As appropriate, includes method of standardization and calibration of outcome assessors, including kappa statistics.  As appropriate, includes statistical analysis.
	gender, if appropriate) should be given. Various groups, including controls, described.		
0	Procedures performed should be described.  Specifics of evaluation should parallel the results portion of the abstract.  Abstract results parallel abstract methods.	Resu □	Clearly mirrors methods; used subtitles if needed. Check for consistency in data in text, tables, and figures.
	Abstract results contain quantitative data along with statistical significance.  Abstract conclusions can be drawn from the results of the study.		Report the results of the statistical analysis for all variables collected and analyzed, not just for those which exhibited statistical or near statistical significance.
	Totalia of the steep.		Text and Tables must stand alone.
			Continued on next page



## Discussion

- $oldsymbol{\square}$  State pertinent new findings, but do not repeat results.
- ☐ How did your results differ from other relevant literature?
- Do not cite tables or figures in the discussion. These should be introduced in the methods and results sections
- Do not cite new results not previously reported in the Results. All results the author wishes to discuss must have first been presented in the Results section of the manuscript.
- Describe limitations of your study in the paragraph just before your Conclusions. Include itemization of limitations of any incomplete data.
- Describe the type of future studies needed, if appropriate.

## **Conclusions**

- lacksquare Synthesis of key points.
- $\hfill \Box$  List and number using Arabic numerals.
- Conclusions should be supported by data.
- Numbered succinct statements.

#### References

- lacksquare Call out references in order they appear in text.
- ☐ Adhere to AAPD guidelines.
- ☐ Verify accuracy of your references.
- ☐ Archive each and all references in WebCite®.

#### **Tables**

- Adhere to AAPD Maximum requirements according to Type of Manuscript.
- lacksquare Include title for each table.
- ☐ Numbers correspond to numbers in text.
- ☐ Define abbreviations below each table.

#### **Figures**

- ☐ Adhere to AAPD Maximum requirements according to Type of Manuscript.
- ☐ Image resolution, after cropping to the area of interest, should be a minimum 300-600 dpi.
- ☐ Figures should be submitted individually as .jpg or tif files
- Gamma Figures should be numbered in Arabic numerals in the order of the first citation in the text.
- Legends for each figure must be printed on a separate page.
- ☐ Figure legends should clearly define findings on each figure, with labels mentioned in the caption if they are used in the figure.
- ☐ If based on individual subject, caption should include subject age and gender.

NOTE: Authors desiring to have more Figures or Tables MUST agree with the electronic publication of their manuscript, and must select this preference. Each separate chart, graph or photograph will be counted as a separate figure. Figures grouped together will be counted as their individual parts. See examples on page 2.

