1.
Complex pProsthodontic ←Treatment in pPatients with gGastroesophageal FReflux Delisease.

### Abstract.

Gastroesophageal #Reflux Delisease (GERD) is defined as the pathological passage of gastric contents into the esophageusoesophagus or in the mouth.

Dental erosion, <u>defined as the progressive loss of hard dental tissues without bacterial action</u>, is -often the first sign of serious disease. <u>Dental erosion is defined as the progressive loss of hard dental tissues without bacterial action</u>. Exposure of the dentinal tubules results in <u>dental hypersensitivity</u> in <u>which it is predominantly</u>. <u>The frontal teeth that are damaged predominantly</u>. It This can becomes a serious aesthetic problem.

A 62 – year old female patient with <u>a serious case of GERD gastroesophageal reflux disease</u> came into dental praxis. She had had unaesthetic prosthodontic treatment in <u>her</u> upper and lower jaw with loss of intermaxillary dimension. Dental treatment had contented of oral hygiene instruction, endodontic treatment, surgical extractions and final prosthodontic treatment.

The new intermaxillary dimension had <u>also</u> been reconstructed <u>whereby</u>—<u>**T**t</u>he ceramic bridge in the lower jaw and hybrid denture in upper jaw had been used.

Key words-: dental erosion, gGastroesophageal FReflux dDisease, dental sensitivity

### Introduction:

Gastroesophageal reflux disease is defined as the pathological passage of gastric contents into the esophageus or in the mouth. Any acid with a pH below the critical pH of dental enamel (5.5) can dissolve the hydroxyapatite crystals in enamel. Gastric refluxate often has often a pH of less than 2.0.

When the first signs of disease are ignored, a serious general disease with many complications can ensueprogress.

Extra-esophageal manifestations of GERD are heartburn, noncardial chest pain, chronic cough, asthma, pulmonary fibrosis, and dental erosion. Early recognition of erosion is important tocritical to ensuring the successfully management and prevention of disease progression.

Dental erosion is defined as the progressive loss of hard dental tissues caused by a chemical process not involving bacterial action. Erosion begins as with the superficial demineralization of the enamel; this which can cause dissolution and loss of hard dental tissues. Exposure of the dentinal tubules results in dental hypersensitivity. The a complex restorative treatment is needed to protect teeth and to avoid dental sensitivity.

2.

My doctor's thesis investigates the relationship between gastroesophageal reflux disease (GERD) and oral health. Gastroesophageal reflux (GER) is defined as the passage of gastric contents into the esophagus or in the mouth. GERD has been classified into 2 types: physiological and pathological. The physiological form occurs postprandially. If clearance mechanisms cannot return the refluxate back to the stomach and the condition becomes chronic, it-this is known as pathologic GERD.

Naformátováno: Písmo: Tučné

Komentář [S1]: Source?

Komentář [S2]: exposure to...?

Komentář [S3]: Do you mean: Her dental treatment consisted of .... (??)

Naformátováno: Písmo: Tučné

Naformátováno: Písmo: Tučné

**Komentář [S4]:** Avoid word-for-word repetition in your definition, particularly when this is so close to the initial sentence that it duplicates

Komentář [S5]: Check spellings

Komentář [S6]: What does this stand for...? Remember to provide the full form followed by the abbreviation in brackets before any use of the shortened form of a term

Komentář [S7]: Please see point SB3

Komentář [S8]: prevent

Komentář [S9]: doctoral

Komentář [S10]: capitalisation is needed here

Komentář [S11]: source?

**Komentář [S12]:** The reader would now exopect to find reference to the pathological form here...

Reflux can be demonstrated with by several diagnostic tests, such as barium esophagography, endoscopic examination, esophageal acid perfusion, measurement of lower esophageal sphincter pressure, and the 24-hour monitoring of esophageal pH. For this test, a small tube (catheter) is passed through the nose and positioned in the esophagus.

Extra-esophageal manifestations of GERD are common <u>such—and can includeas</u>: regurgitation, heartburn, nausea, inflammation or ulcers of <u>the</u> esophageus <u>and</u>; erosion of hard dental tissues.

Dental erosion is defined as the progressive loss of hard dental tissues caused by a chemical process not involving bacterial action. It is the main affection in the mouth. Lesions are usually hard, smooth, and dished out as opposed to caries. The main symptoms are translucency of the approximal surfaces of incisor teeth and/or; concavities at the cervical region of the tooth on labial side.

The lesions are usually wider, rather than they are deep. Once dentin is exposed, the loss of dentin is faster than the loss of enamel. Exposure of the dentinal tubules results in hypersensitivity to heteat, cold and sweet foods. Dental caries involves acid production by the bacteria presents in plaque and presents this haswith different characteristics. Erosion and caries do not characteristically coincide. Further complicating the diagnosis is the fact that enamel and dentin that have been etched by refluxed gastric acid are more sensitive to damage by the processes of attrition and abrasion.

Important by loss of tooth surface also is leads to also salivary production and buffering capacity.

Indications for restoration may include protection of remaining tooth structures, aesthetic considerations, and prevention of dentinal sensitivity with topical fluoride.

Tooth surfaces that have been <u>suffered\_affected\_can</u> be restored with tooth-colored glass ionomer or composite resin. More severely <u>affected\_damaged\_individual</u> teeth may require restoration with porcelain crowns. Root canal therapy is applied if pulpal tissue has been compromised. Once the occlusion is stabilized, final restoration can proceed with either removable <u>partial</u> or overlay partial dentures or multiple crown restorations.

3. Participants of the Spiritual Milieu: Religious Individualists with Spiritual Identity? (summary of a conference paper)

Theis paper analyses key issues related to the definition of alternative or holistic spiritualities. It focuses on the common scholarly picture of a typical participant in the spiritual milieu and its questionable features. More specifically, two issues are concerned. Firstly, the paper deals with the characterization of a participant in the spiritual milieu as a religious individualist or in other words, as a primary and autonomous author of his/her belief system. Secondly, the articulation of identities in the milieu, especially particularly the question of the opposition between spiritual and religious identities, is explored.

The <u>the</u>oretical discussion <u>contained herein</u> is based on data <u>that were</u> collected during <u>a</u>-field research in the Czech town of Mikulov in the period from November 2007 to April 2008. The research focused on Tai Chi practitioners and embraced a participant observation in a Tai Chi group <u>and-where</u> semi-structured interviews <u>were conducted</u> with eight participants.

Even though the religious individualism features were present in respondents' narratives, the informants showed a considerable level of conformity with the group teacher and other participants. Accordingly, the author proposes to refine the understanding of various

Komentář [S13]: the latter

Komentář [S14]: ?? spread out?

Komentář [S15]: It is worth noting that

**Komentář [S16]:** EITHER: of concern **OR** focused upon

**Komentář [S17]:** Avoid repetition of the same

Komentář [S18]: This is somewhat colloquial; it would be more formal to write: While

characteristics included in the category of religious individualism and to treat them as components of a specific language or discourse of the milieu rather than as a description of the actual behaviour of the participants. She suggests to pay more attention to the socializing influence of networks, groups and external authorities on an individual seeker and to analyse the nature of groupings and authorities that emerge and prosper within the spiritual milieu as well as legitimizing factors that underpin them.

Furthermore, there was no clear conception of spirituality or a spiritual person in the respondents' narratives, nor was there a and no e clear identification of the respondents with it. What is more, spirituality and spiritual identity were not always regarded as opposing religion andor religious identity. In fact, there was no common attitude toward religion among the informants. Consequently, the data does not support the thesis about negative attitudes of participants of the spiritual milieu to religion. Moreover, as various meanings attributed to the concept of spirituality suggest, the understanding of the term spirituality and identification with it by participants of the spiritual milieu in the Czech context can differ significantly from the situation in Western Europe and USA.

# 4. Individualized Religiosity: Interpretation of the Selected Data from the "Mikulov Project"

### Abstract of a mMasters tThesis

Theis thesis aims to explore various aspects of contemporary religious individualism in the so-called holistic milieu, and to study its limits in relation to the effects of the social environment on the individual. The authoress reflects on theoretical questions related to the topic (e.g. the role of the media in the genealogy of individualized religiosity, position and role of individualized religiosity in discussions about secularization, the question of its conceptualization and critique of the concept of New Age") as well as in addition to interprets ing the data from the qualitative research which focused on the holistic scene in Mikulov. The authoress used the mMethods of involving participative observation, (done at the Centre for Ecologic Education and in the group practising tai-chi in Mikulov,) and qualitative interviews, which were held predominantly with people connected with tai-chi, were used.

During the analysis of the data, the authoress focused on the issue of features which could be attributed to religious individualism in Mikulov (e.g. epistemological individualism including relativization of "outer" authorities, concentration on the "authentic" or "higher" Self, emphasis on self-development and self-improvement) and she dealt with the issue of the most appropriate concept of individualism with regard to importance and meaning of the individual in the holistic milieu. She also paid attention to the effects of the social environment and to the way how in whichit this influenced the individualized religious expression of her informants. She paid attention especially to the influence of the group as well as "outer" authorities on the so-called autonomous individual and to the process of socialization, which an individual underwent after he/she had entered a certain part of the holistic milieu.

The authoress comes to conclusion\_concluded that the features attributed to individualized religiosity (which express freedom and autonomy of the individual during the creation of its symbolic system) are rather a question of discourse of the holistic milieu, to which the individual is gradually socialized. In spite of the existence of the idea of religious individualismt and his own creating of his quest on the level of discourse, the social reality

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**Komentář [S19]:** It is suggested that more attention be paid...

**Komentář [S20]:** Keep spelling consistent (British or American...??)

Naformátováno: zvýrazněné

Komentář [S21]: Colloquial. In addition to...

Naformátováno: zvýrazněné

Naformátováno: zvýrazněné

Naformátováno: zvýrazněné

Komentář [S22]: On...?

Naformátováno: zvýrazněné

Naformátováno: zvýrazněné

Naformátováno: zvýrazněné

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Komentář [S23]: unclear

points to significant limitations for this individualism related to the spread of certain standardized ideas through the holistic milieu.

Naformátováno: zvýrazněné

Key words: individualization of religion, New Age, secularization, reflexive modernization, individualism, socialization, religious authority

### 5.

### Temporary Anchorage Device - New Possibilities in Orthodontic Treatment

Miniscrews, as an alternative method for absolute orthodontic anchorage, have been extensively used in the last few years. The major advantages of this compared with dental implants or microplates are their small size, which allowing placement in many intraoral areas; low cost; and easy implantation and removal.

The aim of this study wais to provide an anatomical map to assist the clinician in miniscrew placement in a safe locations between dental roots. 20 volumetric tomographic images of maxillae and mandibules were examined. The data were generated by a new type of digital volume tomography called SkyView 3D CBCT based on a cone beam technique. This scanner is based on a cone-shaped X-ray beam technique that uses the X-ray emissions very efficiently, thus reducing the absorbed dose to the patient. SkyView provides one-to-one images.

Acquisition data were transmited to software DentalPlan®, wthere were done all the measurements were done.

For each interradicular space, the mesiodistal and the buccolingual distances were measured at two, five, eight, and 11 mm from the alveolar crest.

In the maxilla, the greatest amount of mesiodistal bone was on the palatal side between the second premolar and the first molar. The least amount of bone could be found was in the tuberosity. The greatest thickness of bone in the buccopalatal dimension was between the first and second molars, whereas the least was found in the tuberosity.

In the mandible, the greatest amount of mesiodistal dimension was between first and second premolar. The least amount of bone was between the first premolar and the canine. In the buccolingual dimension, the greatest thickness was between first and second molars. The least amount of bone was between first premolar and the canine.

# 6. Addressing iInfertility: Analysis of Couples' Rreaction and ITreatment Experience (conference abstract)

-Not only does infertility represents a disruption of individual biography, but <u>it</u> also <u>poses</u> a serious threat to identity. Despite the demographic accounts of low fertility rates and increasing proportions of childless people in contemporary western societies, parenthood still represents the core of adult identity. To father a child means to confirm a masculine identity traditionally associated with potency and virility. Similarly, <u>it is often argued that</u> to fulfill a female role is difficult without becoming a mother, as is evident from numerous analysies of <u>the</u> stigma associated with childlessness and infertility. Coping with infertility and undergoing infertility treatment involves being confronted with prevailing cultural and social norms and expectations concerning marriage, parenthood and gender roles.

Komentář [S24]: in what...??

Komentář [S25]: a

**Komentář [S26]:** be consistent: numerals or letters 22

Naformátováno: zvýrazněné

Naformátováno: zvýrazněné

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**Komentář [S27]:** Try to create some variety in your expressions as this reptition makes the writing style somewhat mundane...

Infertility is not a single diagnosis. It can be characterized as a set of conditions that are rather passed than cured. The treatment is more than the mere applyingication of an objective medical knowledge; it is a negotiated and variable process that challenges our positivistic understanding of health and illness and the authority of scientific and objective medicine.

The aim of this paper is to present—a the data from a long term study focused on the ways of addressing infertility by infertile couples in the Czech Republic. Within the study, the 30 indepth interviews with patients of infertility clinics were conducted.

The analysis has—revealed that patients, especially women, instead of being the passive subjects of medical expertise, take on the role of strategists; who actively seek the information and best solution of their givenin situation. The treatment process is administered in a way that instead of reshaping or challenging traditional definitions of parenthood or gender roles, confirms the status quo. The involvement of men and potential fathers into the treatment process is reduced to providing genetic material on demand. The unequal burden of the treatment for men and women can not be explained solely in biological terms without investigating its social roots.

### 7. Infertility Services in the Czech Republic: Access, Attitudes, Patients' Experience

Reproductive medicine is one of the most progressive and the most publicized medicine branches in the Czech Republic. Its success and rapid development is limited neither by lawegal restrictions nor by religious regulations, as the Czech Republic belongs among the most atheistic countries in the world.

It is estimated that 12 - 15% of couples in the Czech Republic suffer from fertility complications and that 4 - 8% of children born every year are born thanks an infertility treatment. Infertility is not only a diagnosis, it crosses the boundaries of medicine and challenges our traditional positivistic understanding of health and illness and the authority of scientific and objective medicine, in addition to posing some interesting questions about as well as the meaning of parenthood.

The aim of this paper is to present the results of a long term study "Involuntary Childlessness as a Sociological Problem," focusing on the ways of infertility treatment and the experiences of infertility patients in the Czech Republic. The presentation will consist of the following three parts:

- a) Analysis of the infertility services in the Czech Republic
- b) Analysis of attitudes towards assisted reproduction in the Czech Republic based on a quantitative survey (Marriage, Work and Family, 2005)
- Republic based on <u>a quantitative survey</u> (Marriage, Work and Family, 2005) carried out in 1500 Czech households.
- c) Patients' experience based on qualitative research (2007) of 30 couples that went through infertility treatment.

The study has showed that family values are very important for Czech people, <u>and</u> more<u>so</u> for women than men. <u>Furthermore</u>, <u>and that</u>-jnfertility is actually constructed as a medical problem requiring high technology medical treatment. However, <u>in contrast to the theoretical assumption about the sigmatization of non-biological parenthood</u>, the adoption <u>of this treatment would not be is not considered a choice of last resort-in contrast with the theoretical assumption about sigmatization of non-biological parenthood.</u>

**Komentář [S28]:** is positioned among/is part of/is classed as being among

Komentář [S29]: 12-15%

 $\textbf{Koment\'{a}\'{r} [S30]:} \ Colloquial: the \ result \ of$ 

Naformátováno: zvýrazněné

Komentář [S31]: ? methods?

Komentář [S32]: study

Komentář [S33]: underwent

Slightly more women than men would consider individual solutions of infertility, as well as www. omen would also be more willing to end often break thea relationship in the casesituations where there is a of difference of opinion on various solutions of infertility.

The rResearch based on of patients' experiences with the infertility treatment has revealed its precarious nature: —the diagnosis can vary from time to time and clinic to clinic, as well as anin terms of the offered service offered and its the payments required. The patients, especially women, instead of being the passive subjects of medical expertise, take role of strategists, who actively seek the information and best solution of their situation. The treatment is involves more than simply applying of an objective medical knowledge to a negotiated and variable process.

## 8. How to mMinimize mRisreporting?

Minimizing the effect. The existence of measurement error in dietary assessment can have serious consequences when on interpreting dietary data. Underreporting of energy intake results in serious overestimates of nutrient inadequacies [50]. Smith et al. (1994) have shown that the proportion of subjects with intakes less than the Recommended Daily Allowance (RDA) for iron, zinc, calcium and potassium decreases significantly when El underreporters are excluded [58]. The existence of measurement error attenuates correlations between nutrient intake and the outcome parameters, so that important associations between diet and disease may be obscured or confounded. This phenomenon is termed "attenuation bias". While Tthere have been past are some studies that investigated the selective underreporting of specific foods and beverages, but it was beyond the scope of this study to focus on that is. However, it is recognised that the selective underreporting of certain foods may hamper the usefulness of dietary data for the developing of food-based dietary guidelines. Efforts to overcome this problem have led some investigators to exclude underreporters from the dataset. However, such an approach introduces a source of unknown bias into the dataset, and is therefore not recommended (50).

Another approach is to include all the respondents, but to control for energy intake by the use of statistical methods. Several methods for *energy adjustment* exist; and their choice or and justification for their use is debatableed. Four models, namely: the standard multivariate model, the energy-partition model, the nutrient-density model and the residuals model (40), have been proposed for accounting for forthe total EI when one is examining the effect of nutrients on disease outcomes: the standard multivariate model, the energy partition model, the nutrient density model and the residuals model (40). The most commonly used methods of energy adjustment are the nutrient-density method and the residuals method (4,8).

The nutrient-density method is used as an absolute amount of nutrients divided by total energy intake. This method of adjustment is dependent on changes in energy intake, such that calorie-adjusted amounts of nutrients obtained by using this method are still correlated with energy intake. Therefore, using the nutrient-density method is not appropriate in studies looking which focus onfor the diet-disease relationship. When using the residuals method, amounts of nutrients are independent from the total energy intake (8).

A cross-sectional study one 901 young subjects in Iran (8) determined the effect of underreporting of energy intake on the estimates of nutrient intakes. It was found that while the absolute intakes of macro- and micronutrients (except forcluding B12 in females and B6

Komentář [S34]: The analysis revealed that patients, especially women, instead of being the passive subjects of medical expertise, take on the role of strategists who actively seek the information and best solution of their given situation.

**Komentář [S35]:** If in question form, rephrase heading to: **How can misreporting be minimized?** 

Komentář [S36]: Two referencing styles...??

Komentář [S37]: ?

Komentář [S38]: Meaning is unlcear

and zinc in both genders) were lower in underreporters, but following the residual method of energy adjustment, no significant differences were seen. Because underreporting of energy intake was found to affect the estimates of nutrient intake, they suggest making an adjustment for energy intake in studies aimed at determining the association between a certain chronic disease and nutrient intake.

### 9.

Basic functions require a set of steps to ensure that a given outcome is achieved. For instance, for To even boot aa computer to be started up, or booted, it is necessary to proceed for many transfers to take place inside the hardware among its components. It is a basic function which must work, however there are several methods of how to this can be achieved that. Especially the frast transfers are very important in computer science which results in higher overall throughput of the system itself and also in faster communications with others. ones.

As an answer to permanent higher requirements in the networking area, <u>The Liberouter project, supported by Czech national research and education network CESNET and European project 6NET,</u> has been established as a project in response to permanent higher requirements in the networking area supported by Czech national research and education network CESNET and European project 6NET. The original intention was to develop a router for high traffic networks. After some time, this idea was augmented to other network usages such as network filtering and monitoring. All these functions run on COMBO6 family PCI cards.

This thesis is based on one of many researche studies that have been alreadpreviouslyy done under Liberouter – NetCOPE – which we describe in chapter 2.5. In short, it is a hardware platform trying to achieve universality along with speed and it is fully programmable. Software which runsning on ithis can do fast transfers, if it is instructed to required, where-Derivers are usually used for this purpose. Despite some are ready yet, a new NetCOPE software was developed and it needs a new driver.

This thesis describes the evolution process of such drivers from its requirements, considering variants to be as fast as possible but still be compliant with hardware specification, especially particularly direct memory access in combination with ring buffers.

After requirements settle down, we model the specification with <u>the</u> help of UML and <u>getreach</u> towards final code implementation in C language (kernel part in GNU flavour). As much as possible, code parts (all corner cases at best) need testing, we <u>figure outestablish</u> which testing techniques might be applied on drivers and finally compareing these with older drivers and card software <u>systemss will be done</u>.

## 10.

The aim of my postgradual study is to identify and describe development, operations and business models of modern <u>Wwe</u>b services (Web 2.0) interconnected with modern mobile platforms in reflection of the classical Software Engineering Processes. The importance of the Internet and Rich Internet Applications is <u>a fast growing phenomenon-fast</u>. Hence I would like to apply for the grant covering the ICT 2008 event <u>in order to get in touinteracteh</u> with leading visionaries from this field <u>so as to and</u> attain the cutting edge of <u>a</u> new important decade when the major transformation in ICT will be held. The Internet has already become a development platform. Web 2.0 is has been responsible for rather a change ining the way how

Komentář [S39]: unclear

Komentář [SB40]: postgraduate

**Komentář [SB41]:** avoid dashes in academic writing, where possible

tin which the Internet is used by both users and software developers. The paradigm, which served for the last three decades, has been overcome. We should not consider the Internet to be a simple client—server system that just merely delivers web pages. Rather, it should be considered to be We should think about the Internet as a complex distributed services architecture with URLs serving as a first

generation API (Application Programming Interface) for calling those services.

The main key factors are flexibility and simplicity, usability and accessibility, decentralization and openness. We are able to use all benefits from the Internet platform everywhere and always thanks to present development of the modern mobile platforms and the mobile connectivity to the Internet. Therefore, it is necessary to set new approaches combining these opportunities with orientation to end users representing motive power. The goal of my study is to prepare development processes for that platform. I believe that ICT 2008 will help me significantly to determine appropriate methodology requests. Hereupon, the models under the concern of my research will be perfectly applicable for on-coming European projects. Since I am a project manager specializing at web applications, I would like to get acquainted of future directions in that field as well.

# 11. Advertising on <u>oOnline Eerotic eContact sSites</u>: Motives for <u>Sseeking an Ooffline Ssexual pPartner</u>

The internet has become a standard communication medium, a source of information orand entertainment. In given circumstances, it fulfils the function of satisfying the needs of an instinctive character. It mediates information about sex, sexual arousal as well as sexual gratification (Boies, 2002, Divínová, 2005, Döring, 2000). Some individuals use the internet to seek out offline sex. Thus, they search for a partner to share intimate moments with in real life. This activity is a new type of interaction where meeting for sexual purposes online comes up. Arises.

This new form of activity raises the traditional question about reasons <u>as to</u> why people engage in such sexual activities mediated by the internet. The triple A engine model pertains to the known concept explaining the attractiveness of obtaining sexual contacts through the internet. The triple A engine is an acronym of three words: Accessibility, Affordability, and Anonymity (Cooper, 1998).

The aAnonymity interacting with accessibility and affordability may create the feeling of freedom and dis-inhibition that is manifested as rapid self-disclosure and a willingness to

Komentář [SB42]: unclear

Komentář [SB43]: both words not needed

Komentář [SB44]: use words

Komentář [SB45]: this seems somehwta vague.

**Komentář [SB46]:** avoid use of phrasal verbs in academic writing (use **conducted**, here)

Komentář [SB47]: which theory?

Komentář [SB48]: Avoid phrasal verbs

speak about sex and sexual fantasies. Later King (year?) (as-cited in Daneback, 2006) extended this engine and added Acceptability: the internet is an acceptable way for dating and accessing explicit sexual materials. Tikkanen and Ross (2003) added a fifth A – Approximation (-the ability to experiment with one's sexual identity and behaviour by approximating being gay, either through fictitious selves or cybersex). Now thThis concept is called the quin A engine.

The quin A engine enlarges the meaning of the internet in a certain way. Approximation of specific sexual contacts begins in virtual environments and this might encourage the male or female user to meet online sexual partners in real life and to have real sex with him or her. Studies supporting this thought show that people with bisexual or homosexual orientation often use the internet to seek out offline sexual partners (Rietmeijer et al., 2003; Bolding et al. 2006)

According to Brym and Lenton (2001), online dating sites play a remarkable role in...??. These contact sites allow people to meet each other, people whom they would have never otherwise met each other in real life. They also offer not only privacy and discreetnesstion but also a more comfortable way to meet new people. The advantages of online dating sites partly overlap with the quin A engine theory.

Many surveys highlight the positive relationship between cybersex and meeting offline sexual partners (Schneider, 2000; Daneback et al., 2005; Carvalheira & Gomes, 2003; Daneback et al., 2007). This means that some individuals engaging in cybersex might experience a transfer of online sexual contacts into the real world. According to Calvalheira and Gomes (2003), the priority for a-the majority of respondents is the opportunity to meet people with similar interests and to have sex in real life. Daneback et al. (2007) claim that cybersex fulfils the role of a certain practice ground or verification of sexual compatibility before meeting offline. It seems that cybersex might incite the transfer of sexual contacts formed online into real life.

A Swedish study investigating the search for offline sex partners through the internet found that 30% men and 40% women from 1458 respondents reported having sex with someone they met online (Daneback et al., 2007). Women aged 34-49 and 50-65 years, homo- and bisexual men and singles (single, divorced, widowed) are more likely to seek offline sexual partners through the Internet. Thus, this activity might also be a reaction to the absence of a partner.

A detailed analysis of reasons why men use the internet to find other men for sex in real life shows that anonymity, safety, excitement and experimentation of internet contact, avoidance of interpersonal contact, getting to know people better, control of visuals, and the environment all play a certain role <u>in this</u> (Ross et al., 2007). The internet has many advantages for shy people. Thanks to its special properties, it helps in overcoming barriers to approaching others in person. Respondents who preferred meeting online emphasized the possibility of choosing appropriate sexual partners, and individuals who preferred first meeting in real life -reported similar reasons to those of respondents preferring online contact first. This concurrently highlighted the importance of reality and the possibility of building relationships. According to Ross et al. (2007), the internet creates a special type of sexual contacts existing between reality and virtual environments. These results are most perceivable for men looking for same sex partners on the internet.

Komentář [SB49]: This classification presupposes that bisexuals and homosexuals cannot be single – as they are labelled as a separate subgroup here...

Komentář [SB50]: Be consistent: capitalised or

Komentář [SB51]: Colloquial; use: In light of its

The following qualitative study focuses on an in-depth analysis of motivation factors related to searching <u>for</u> offline sexual partners on the internet. The majority of participants considered themselves <u>to be</u> heterosexual.

## 112. Risk fFactors of Oosteoporosis - kKnowledge and pPractices among aAdolescent Ffemales

### ANNOTATION:

Osteoporosis is a serious metabolic disease, occurring atduring—later age, most frequently through osteoporotic fractures — which are the main morbidities and invalidities at thein old age. It is mMostly women are who tend to -suffering from ithis illness, although but it is n-ot rare among men—as—well. The most effective prevention of this disease is founded—during childhood and adolescence when the organisms creates the greatest reserves of calcium. Theis work uses the questionnaire method to find outgather—about the knowledge, attitudes and practices of adolescent females (age of 14–19) regarding the risk

factors of osteoporosis, specifically the physical activity, smoking and nutrition. It also records the differences in knowledge in correlations to age and school type. In the section on nutrition, area-it determines the average intake of those nutrients that relate to the bone health (calcium, phosphorus, vitamin D, proteins and sodium). The future goal of this work is an intervention programme aimed at the support of such behaviour that would be consistent with the a healthy lifestyle, supporting the osteogenesis and the maintenance of muscles.

### KEY WORDS:

adolescent females, osteoporosis, risk factors, knowledge, physical activity, calcium intake, smoking

## INTRODUCTION:

Osteoporosis is a serious metabolic bone disease, from which more and morean increasing number of people in the world are suffering. The prevention of this disease is often aimed only at women after the menopause, at the age when they already show the proclivity to this disease or the first signs of bone mass decrease. The most important of prevention is the primary prevention, i.e. during childhood and adolescence when the prevention is actually the easiest. The body creates the

greatest reserves of calcium till-up to the age of about 25-30. After that the bone mass is slowly destructed.

Among the main risk factors that can be influenced belong: the low intake of calcium in the diet, low physical activity and smoking. The main factor that influences the bone density is the calcium intake during the childhood, adolescence and early adulthood. People who created greater reserves of calcium during their youth are susceptible to haveing more bone mass to be destructored in the osteoporosis-endangered age (Sinkiewicz, 2003). The p

Physical activity contributes greatly to the bone health. It works as through the physiological stimulation of the osteoblastic activity and bone neo-production. The most suitable activities regarding osteoporosis prevention are rather weight-bearing activities or activities using some sports tools when there is which created a burden upon the bones. They include especially the high impact activities, e.g. gymnastics, figure-skating, basketball, volleyball etc. They have a more favourable effect on bones than sports like swimming or biking which create only a minimal burden upon the bones (Geusens, 1998). An increasingly More and more sedentary lifestyle efamong children and adolescents today is also alarming and a contributory factor in

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<u>osteoporotic ill-health.</u> This trend is even more serious among adolescent females who <u>tend</u> <u>to live a more sedentary lifestyle more often than boymales</u> (Vincentr-Rodríguez, 2006).

One of the risk factors of osteoporosis and thus also easier occurence of fractures is smoking. The explanation of the negative influence of smoking on the bones is not simple because the individual elements of the smoke interfere differently with the bone tissue metabolism (Kocián, 1998). Sinkiewicz (2003) mentions that the female smokers lose 5 to 10 % bone tissue more than female non-smokers by the time they reach menopause. Other lifestyle risk factors of osteoporosis are higher intake of alcohol, caffeine and cola beverages. Drinks like Coca Cola contain a lot of phosphorus which leads to hypocalcemia and osteoporosis (Kocián, 2002). The higher intake of these drinks is therefore undesirable, especially among children and adolescents. The lack of vitamin D also contributes to osteoporosis. That can occur especially in people who spend most of the day indoors. Another factor that affects the bone mineral is the lack of proteins. That can occur in the vegan and macrobiotic diet because it lacks enough building material for the bone tissue. On the other hand the high animal protein diet causes acceleration of bone resorption probably through the increased acidification of organism that is caused by the oxidation of sulphur amino acids (Kocián, 1997). The higher protein intake usually coincides with a higher calcium intake. The calciuric effect of high protein intake can thus be minimized. The adequate protection of bones is probably provided by the proportion calcium:proteins ≥ 20:1 (mg:g). The high intake of proteins therefore doesn't have to have harmful effects on bones provided that there is an adequate calcium intake (Heaney, 1998).

The goal of the primary prevention of osteoporosis is to ensure the attainable peak bone mass during childhood and adolescence and maintainance of this bone mass in adulthood. That should be achieved through emphasising and ensuring of an appropriate intake of calcium and proteins in the diet, appropriate supply of vitamin C and D, reasonable physical activity and excluding of the toxic influence of the environment.

This work deals with the preventable risk factors, specifically the lifestyle factors, and investigates the level of adolescent females' knowledge in this area. The work focuses on adolescent females' attitudes and their real practices – i.e. the calcium intake in their diet, the level of physical activity and the occurence of smoking.

## 132. Overamplification of eCentrosomes in Hhuman eEmbryonic sStem Ceells

Human embryonic stem cells (hESCs) are undifferentiated cells derived from human blastocyst-stage embryos that can be indefinitely propagated in culture and as being pluripotent. T-they can be also induced to differentiate into all mature cell types with special functions. These two abilities, to self-renew and to differentiate, make hESCs an attractive tool for regenetative medicine, drug development, and toxicology. In spite of representing a major promise for cell replacement therapy of various human diseases, future -therapeutical applications of this unique cell type isare limited by itstheir tumorigenic potential after transplantation.

Several studies have reported <u>an</u> accumulation of various types of DNA alterations in hESCs that—have been propagated in culture for prolonged periods of time. It has been repeatedly shown that centrosomal defects such as alteration of numbers, structure or <u>the</u> functions of centrosome, are relevant contributing factors for chromosome instability and aneuploidy in cancer cells lines.

Komentář [SB53]: Regenerative ?? As a primary microtubule organizing center of animal cells, the centrosome assures symmetry and bipolarity of the cell division, essential for accurate chromosome segregation. The presence of more that than 2 centrosomes (centrosome overamplification) disrupts the mitotic process due to the formation of extra spindle poles. Multipolar mitosis leads to chromosome missorting and damage thus causing aneuploidy. Cell death is a common outcome of arising cells that lack ing essential genetic information. However, in rare cases, gains and losses of certain chromosomes may provide growth advantages for surviving daughter cells. Alternatively, some cells adapt to multiple centrosomes by clustering them at spindle poles (pseudo-bipolar mitosis). In spite of -resembling normal bipolar division cells with clustered centrosomes are still at risk of chromosome segregation errors.

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-Cultured hESCs also develop abnormalities such as supernumerary centrosomes developing multipolar or pseudo-bipolar mitotic spindle (by centrosome clustering) and deffective kinetochore capturing with \_\_chromosome fragments left behind during mitosis. Following the eExaminatingation of 13 hESC lines cultured in two independent laboratories, we have found that undifferentiated hESC are typical by unusually high frequency of mitoses with the number of centrosomes exceeding two. During the differentiation process and prolonged invitro propagation this feature is beingwas suppressed. We propose that -long term cultured cells acquire mutations that suppress

centrosome amplification by reducing their requirements to certain signals, eliminating abnormal stimulation or both.

We have also found that culture conditions, mainly the ability of hESCs to appropriately adhere to the culture substratum, influence the overamplification of centrosomes. as wwe elearly demonstrated with clarity that a suitable culture surface is effective to reducing thee frequency of multicentrosomal mitoses in hESCs. So that we declar Hence, we propose that centrosome hyperamplification is extensively influenced by a cell attachement signal ing network.

In order to address possible molecular mechanisms responsible for centrosome overamplification in hESC we focused on key regulators of centrosome metabolism, CDK2 and Aurora A. CDK2 is highly active in undifferentiated cells and its chemical inhibition reduces the percentage of multicentrosomal mitoses in hESC. Likewise, Aurora A protein is overabundant in hESC. This centrosomaly localized mitotic kinase is known to be implicated in centrosome amplification and causative for defective spindle assembly in various cell types.

We conclude that both deregulation of molecules normally controlling centrosome replication, CDK2 and Aurora A, and inefficient signaling from adhesion mediating proteins contribute to development of centrosomal abnormalities in cultured hESCs.

### 143.Summary

The Analysis of the Effect of Chemical Cyclin-Dependent Kinase Inhibition on the Differentiation of Human Embryonic Stem Cells Cyclin-dependent kinsases (CDK), cyclins and inhibitors of CDKs belong to the group of molecules, that primarily function in the regulation of cell cycle progression. However, it is becoming clear, that they also participate in the process of differentiation.

Human embryonic stem cells (hESC) represent pluripotent cell lines with the ability to selfrenew and capacity to differentiate into almost all somatic cell types. Due to these characteristics, they have created a new pportunities both in basic and applied research as well as for therapeutic applications.

Mechanisms, which drive cells into differentiation are, however not yet well understood. One of the differences between embryonic and somatic cells is represented by the regulation and duration of the cell cycle. Cell cycle progression of hESC is much faster due to shortened G1 phase and Rb protein is present mostly in the hyperphosphorylated form. This might mean that restriction point in the G1/S transition is not functional and cells are therefore insensitive to mitogenic signals. Inhibition of the cell cycle at this point might prolong the time period, throughout which cells can respond to differentiation stimuli and thus induce (or at least facilitate)differentiation.

The aim of this study was to analyze the effect of chemical inhibition of CDKs with synthetic inhibitors (synthesized in the laboratory of Growth Regulators at Palacky University in Olomouc) on the differentiation of hESC. Results show, that at least one inhibitor, Olomoucine II, induced/faciliated the differentiation changes in the ES cells different from those of spontaneously differentiating cells. Analysis of the cell cycle showed that cells accumulate not only at the G1 but also at G2/M transition point. Kinase assays confirmed, that Olomoucine II inhibits not only CDK 2, but also CDK 1 and potentially may be inhibiting also CDK 9 and/or 7. However, after prolonged cultivation of hESC with Olomoucine II in standard culture media, cells differentiated into at least one specific cell type (neural cells) and show neuro-specific markers Sox1, Neuro D1 and Nestin. In conclusion, differentiation of hESC can be induced by inhibition of cyclin dependet kinases, however in our case, the mechanism of differentiation can not be associated exclusively with the elongation of the G1 phase of the cell cycle.

### 154. Biological Ttests of β-alloys for Implantology

Introduction: Beta alloys find, Deue to their relatively easy workability and good mechanical and physical properties (-Young's modulus of elasticity), beta alloys find ample application in both contemporary and future dental implantology. In the near future, a marked rise in the of application of  $\beta$ -alloys may be expected in current clinical practice. Within the framework of a long-term project realised by staff of Research Centre of Stomatology,  $\beta$ -alloys were chosen for the testing of biocompatibility. The main objective of this research was to assess the influence of admixtures in alloys on corrosion resisteance and biocompatibility. A further aim was to suggest suitable  $\beta$ -alloys with satisfactory mechanical and physical properties to comply with the requirements of corrosion resisteance in the biological environment. Biocompatibility was assessed baseding on the results obtained in tests. One of themse was tests focused onef the adherence of cells to the tested material.

<u>Aim of sStudy</u>: For a period of 12 months, in the Research Centre of Stomatology, we had been studying the adhesion of cells to alloys of Ti Ta, Ti Al Fe, Ti Al V, Ti Nb, and Ti Mo in laboratory conditions.

<u>Material and mMethods</u>: In each sample, adhesion to both quickly and slowly cooled alloys was compared by means of an electron microscope. SEM: treatment of cellular material on tested ssamples from Ti alloys. Samples on discs of 3x8 mm are cleaned and sterilised in an autoclave, then put into culture dishes under sterile conditions. Test cells: HeLa cell lines, culture medium: MEM + 5% NCS with the addition of L-glutamine and antibiotics with antimycotics.

<u>Conclusion</u>: In the alloys of Ti Ta, Ti Al Fe, and Ti Al V studied, both adhesion and biocompatibility were comparable with the control group; and the method of alloy cooling

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proved to be insignificant. The use of these new alloys in implantology seems appears to be very promising in the future, and therefore further research appears desirable.

## | 165. ACUTE EFFECTS OF SIGMA RECEPTOR LIGAND HALOPERIDOL ON ISOLATED GUINEA PIG HEART

Sigma receptor ligand haloperidol is a psychotropic drug used in the treatment of various psychiatric disorders and agitation. Its life-threatening cardiovascular side effects (cardiac arrhythmias such as torsade de pointes, ventricular fibrillation or even cardiac arrest) are often triggered by QT-interval prolongation. Therefore during our research, we examined the effects of haloperidol on 3-D electrogram of isolated guinea pig hearts with respect to the repolarisation phase of electrograms. Moreover, the mean coronary flow was followed in this study.

Twelve adult male guinea pigs were sacrificed under deep ether anesthesia. The hearts were perfused according to Langendorf with Krebs-Henseleit solution (K-H) at constant pressure (80mmHg) and 37°C (CaCl2, 1.2 mM). After <u>a\_30\_minute</u> control period, 10nM haloperidol in K-H was administered for <u>a\_further\_30\_minutes</u>. After <u>a\_successive 30\_minute</u> wash-out period, the putative down-regulation of sigma receptors was examined by the second 30\_minute administration of 10nM haloperidol. Fifteen successive QT intervals were measured and averaged in the 30<sup>th</sup> minute of each period\_-and the incidence of arrhythmias was monitored.

No significant occurrence of arrhythmias was observed, except of sporadic ventricular extrasystole or bigeminy during the first haloperidol period. The QT-intervals were prolonged in the first haloperidol period (168, 3 vs. 184, 7ms; NS). This effect was irreversible (average QT-interval in wash-out was 185ms). In the second haloperidol administration additional QT-interval prolongation was not found. Minimum of arrhythmias in our study is due to a lower haloperidol concentration than usual therapeutic plasma level (micromolar range). Since nanomolar concentration is close to binding constant of sigma receptors, we can conclude that these effects are mediated by the binding of the drug to cardiac sigma receptors and not by direct effects on membrane ionic channels.

# 1<u>7</u>6. Space and <u>Ttime <u>\*Resolved oOptical eEmission Sspectroscopy</u> of <u>dDiffuse <u>sSurface Ceoplanar Bbarrier dDischarge in <u>nNitrogen</u></u></u></u>

Keywords: coplanar barrier discharge, space and time resolution, optical emission spectroscopy, temperature

During the last few decades, the plasma technology based applications have gained an important role in the industrial processing of materials [1], particularly especially in the case of surface modification. For real industry in-line processing of materials, there is a great demand on generation of highly non-equilibrium homogeneous plasma with as high as possible pa power density that is as high as possible. The promising candidate for such utilization is the diffuse coplanar surface barrier discharge.

The diffuse coplanar surface barrier discharge (DCSBD) has unique properties such as the generation of thin diffuse layers of macroscopically stable and uniform non-equilibrium

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plasma at atmospheric pressure and with high power densities (up to 100W/cm3) [3]. When compared with other atmospheric pressure barrier discharge systems, the advantages of DCSBD systems stand in their simplicity, robustness and capability to process in a wide range of working gases. [4]

There are numerous parameters that can affect the properties of the DCSBD. In this work the influences of electrode temperature and applied voltage amplitude on plasma parameters of DCSBD were studied. The electrodes of DCSBD were cooled/heated by means of Peltier cells. The discharge spectra were taken by means of quartz optical system that enables the scanning (profiling) of plasma layer in axis perpendicular to electrode orientation.

Using space-resolved optical emission spectroscopy, the spatial profiles of vibrational as well as rotational temperatures of second positive system of nitrogen were obtained. In addition to these measurements, the effects of electrode temperature and applied voltage amplitude on spatial and temporal distribution of DCSBD plasma were investigated. The intensity timespace maps of second positive system of nitrogen and first negative system of nitrogen were then integrated from the spectra.

It was found out that the applied voltage amplitude and electrode temperature have observable effects on the vibrational/rotational temperature spatial profiles as well as timespace plasma distribution. The rotational temperature varies across the profile from 300K up to 550 K. The vibrational temperature varies across profile from 1900K up to 3100K. The variation of discharge structure with variations of applied voltage amplitude, i.e. the prolongation and different regimes of plasma across the profile, can be distinguished from temperature profiles as well as intensity time-space maps.

# 187. Psychomotor $\underline{*T}$ herapy at $\underline{the}$ Faculty of Sports Studies, Masaryk University, Czech $\underline{*R}$ epublic

Nowadays, different factors <u>can</u> cause a row of mental disorders. Among theose factors which cause serious health problems in a biopsychosocial model belong civilizing disorders and stress. <u>The vast Mmajority</u> of afflicted people do not seek <u>for help</u>. This is usually caused by a lack of information about thoese disorders; in early stages, thoese disorders are tend not to be not fatal and people usually do not talk about them.

——Physical exercise is an indicator of body and mind status. Physical exercise<u>It</u> is product of muscle activity which and brings information of processes in the body. The Sstate of a person's body and mind can be assumed according to physical activity.

Psychomotor therapy is a part of kinezio\_theraphy and is used as a supportive treatment for patients with mental disorders. AlsoFurthermore, if stress is perceived only subjectively and disease does not bring any psychosomatic problems, psychomotor therapy can be used. During psychometric therapy, we are working with the body but this also influencesing the mind and social relations.

In 2007, with <u>the help of the development project of Ministry of Education, the Youth and Sports Czech Republic and Counselling eCentre of Masaryk University Faculty of Sports Studies <del>opened began offering psychomotor therapy for students and employees of Masaryk University. Since autumn 2007, the therapy whas been well frequented by clients</u></del>

(<u>ordinarytypical</u> attendance <u>21 elients</u> per lesson <u>is 21 clients</u>). Practical lessons of psychomotor therapy take place in <u>the gymnasium</u> of Faculty of Education Masaryk University. Lessons are attended also by students of University of the Third Age.

Psychomotor therapy lessons could help to overcome hard life situations, stress and everyday problems. ByThrough this therapy, we help keeping our clients to maintain or achieve a healthy lifestyle and to increase their quality of life.

### 198. The fFunction of the wWill in the Ceoping of with Life Ssituations

The Rresearch on the will and the motivation is one of the main problems currently being investigated in psychology and psychotherapy. It is very important to answer the questions: Can I work consciously with my own behaviour or are my deeds being determined with automatism on which I have little influence? Can I make decisions as a free aetgent (have I gotdo I possess the free will?), or am I under the thumb control of internal impulses and behavioural variables? There have been three most respected answers to this question: Sigmund Freud, with his psychoanalysis and deep psychology, says that most of our behaviour is being determined with through internal unconscious impulses that we can integrate only partly into our consciousness and subsequently also into our behaviour. The Second greathighly celebrated approach, which haswas created arisen in the USA, is behaviourism. His key hypothesis is that we are influenced by external conditions such as education, cultural and social standards. Therefore, most of people's behaviour is, in viewfrom the perspective of behaviourism, learned and is automatic. The third approach, which replies critically to the approaches mentioned above, is humanistic psychology, whose founders are A. Maslow, C.R. Rogers and V.E. Frankl. These psychologists say that everybody has got his dignity and has got ffree will too and. He ecan decide and choose good despite of ominous internal and external factors.

In view of will and motivation, American scientists tend to opt for reductionism. They are often focusing often on limited numbers of aspects and they are insensitive to a variety of many possible variables. If we believed in theirheld their conclusions in high regard, it shwould mean that we are similar to machines that are automatically regulated and have not got the little possibility of alternation (if anybody does not help them and does not supply them with proper software). It look almost likeappeared that these is research es wasere conducted by a psychological lobby group that wished to persuade people that without the support of psychologists, and his support it is impossible to live a dignified and valuable life. Contrariwise are these researches challenge to a reaction that people have got very uniqueness and wisdom and to production such researches that evidence a importance of the free decision making and oft the subject "will".

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