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Coaching Your Patients

to Optimal Interdental Health

Course #11-2UK

Disclosure Statement:

- The content for this self-study course was developed and written by Carol A. Jahn, RDH, MS; a Water Pik, Inc. employee
- Water Pik, Inc designed and produced this self-study course
- Water Pik, Inc. manufactures and distributes products addressed in this course

Course Objective:

To provide the dental team with the basic knowledge and skill set required to elicit effective behaviour change in patients particularly in the area of interdental cleaning.

Learning Outcomes:

- Understand the limitations of the 'show, tell, do' method
- Discuss the principles of motivational interviewing
- Describe the stages of change
- Explain the guiding technique for coaching
- Identify effective alternatives for interdental cleaning

INTRODUCTION

Dental professionals know that regular interdental cleaning is a prerequisite for most people in order to achieve optimal oral health. Yet for all the educating, persuading, or even cajoling that is done with patients, less than half heed the guidance. This leads to frustration on both sides; practitioners who do not understand why people fail to follow recommendations, and patients who view it as being preached to.

The crux of the problem is not that practitioners preach or that patients are 'deaf' to recommendations. Rather, the issue at hand is using effective techniques for behaviour change. Most dental or dental hygiene curriculums include little instruction on this subject even though advising and educating patients consumes an important part of what dental professionals do on a daily basis. Most of the learning comes on-the-job through trial and error. The problem is that despite our best efforts, reports show that only about one third (32.9%) of adults utilise floss or other types of interdental cleaning on a daily basis.[1]

If 'best efforts' are not leading to successful behaviour changes in patients, then perhaps it is time to re-examine current methods and give consideration to a different approach. Many practitioners are beginning to realise that there are numerous other products that can work as well as dental floss, and they are beginning to include them in their recommendations. This is a positive step forward. It is also important to consider that a different tactic to patient education may also be needed.

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CHANGING BEHAVIOURS

Practitioner-Centre: Compliance

Achieving patient compliance is founded on the belief that the provider is the expert. The practitioner educates the patient, and assumes if they know the 'why' and 'how', they will do it. If patients do not follow advice, then they are considered unmotivated or lazy. The traditional approach to this type of patient education has been the 'tell, show, do' method. The 'tell' part involves explaining to the patient the 'why' of the recommendation (i.e. plaque accumulation leads to gingivitis). This was followed by 'showing' the patient what to do like demonstrating the use of dental floss. The 'do' component meant having the patient demonstrate the use of the product.

The problem is that this method rarely works for dental professionals and other healthcare providers. It has been shown that for patients who suffered a myocardial infarction and were prescribed three drugs, during the first month, one-third stopped taking one or more medications with 12% stopping all medications.[2] This is not surprising as an inverse relationship has been shown between compliance and daily dosing. When patients are prescribed a single daily dose of medication, compliance is 78% compared to 72%, 64%, and 60% for two, three, and four times a day dosing, respectively.[3] It is often more difficult for people to comply with regimens, like oral self-care, that need to be implemented for the rest of their life as opposed to something with a finite end. People sometimes underestimate their own personal risk for a condition or disease as well as overestimate the skills they have to limit the risk.[4]

Some of the difficulties with gaining compliance centre on the word itself, which according to Merriam-Webster means 'yielding to the wishes of others.' As practitioners observe, this may work in the short-term, but rarely in the long-run. Patients often tell stories of how they flossed regularly for a few weeks post appointment, and then stopped. Dental professionals are sometimes tempted to use the 'fear factor' to drive compliance. As many have discovered this is not an effective mechanism. Fear may hinder compliance in a couple of ways. For some, fear drives denial of the problem. For others, fear ratchets up anxiety to the point that interferes with attention and rentention.[4]

While knowledge is a necessary component of behaviour change, it is not the only condition needed for long-term change.[4] The challenge with changing behaviour is that people have different personalities, styles of learning and experiences, as well as generational and cultural influences. All of these

impact their interest and capacity for change. Practitioners bring their own personal preferences to the table when trying to influence patients. In essence, one tends to teach the way one likes to be taught. This is underscored by the example of the patient who has a 'ha' moment when seeing a new practitioner such as a substitute dental hygienist. The regular provider often feels stumped since they know they have conveyed the same information without a successful result. What most fail to understand about the situation is that it is not about lack of credibility on the part of the regular provider but instead a different style or way of presenting the information to the patient that resulted in the connection.

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Patient Centred: Coaching

In recent years, a new approach to patient behaviour change has emerged; **motivational interviewing (MI)**. The underlying premise for MI is that motivation is malleable, and all patients have potential for change. Instead of the show, tell, do approach, MI focuses on collaborating with the patient to help them tap into their own goals, values, and aspirations and use them as a motive and resource for change.[5] MI is a form of coaching. Both are patient or client-focused and founded on the similar principles of taking action based on values, goals, or desires. Rather than providing explicit direction, practitioners balance direction with listening and guiding.[5,6]

A systematic review of the literature for MI found that it outperforms traditional advice-giving in the treatment of a wide range of behavioural-related conditions and diseases. MI produced significant clinical changes for weight, cholesterol, blood pressure, and alcohol consumption. Data included both the direct measurement of clinical outcomes as well as indirect measures like questionnaires. The effectiveness of MI was not related to a provider's level of education or professional rank. Doctors, nurses, psychiatrists, psychologists, midwives, and dieticians all elicited effectiveness. MI can be effective even with a brief encounter of 15 minutes. More than one encounter with a patient does help increase effectiveness.[7]

MI has been used with parents of small children to help prevent/reduce early childhood caries. Follow-up at one and two years found that children whose parents received MI had less new carious lesions than children whose parents received a traditional approach.[8,9]

MI relies on a set of techniques and coaching style.[7] It is founded on four guiding principles.

The acronym for these is RULE.[5]

- **Resist**
- **Understand**
- **Listen**
- **Empower**

Resist – The righting reflex is a guiding principle that refers to the reflex that practitioners often have to set things right particularly when they see destructive behaviours or people 'headed down the wrong path'. The reason this often backfires is that it is natural for people to resist being persuaded so much so that some even view it as coercion. When practitioners take up the 'right' side of the argument such as 'you need to floss everyday' the only side left for the patient is opposition for example "I don't have time." MI coaches patients to take up the 'right side' of the argument for themselves.[5]

Understand – Your patient's motivations will provide the greatest clarity on how they perceive the current situation and where their values and concerns lie in changing. Giving the patient a voice to this helps them explore the possibilities and take up the argument for change.[5]

Listen – The direction to listen to your patient may seem like simple patient education; but it is actually a complex skill. Good listening skills involve allowing the patient adequate time to talk without interrupting as well as being able to ask appropriate questions, clarify responses, and summarize meaning.[5]

Empower – Your patient is key in assisting them to understand that they can make a significant difference to their own health. In this role, practitioners act as facilitators by helping the patient bring their own expertise to the forefront such as what might be the right interdental aid for them and the best time to implement it.[5]

MI is a tool that dental professionals can use to effectively coach their patients to improved oral health. The shift from an 'expert' to a coaching role is a learned skill that improves with practice. It does not mean total abandonment of ethical responsibilities in instances where informing a patient of the nature and extent of the problem is required. It also does not mean giving up all power to the patient. Rather, it gently

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executes a plan for behaviour change that allows the patient to look within themselves and assume responsibility for their own choices and necessary behaviour changes.

COACHING SKILLS

The shift from advice-giving to coaching can seem awkward initially. The acquisition of new skills is often stressful, and it is easy to slip back to old habits. Recognising this helps practitioners have greater acceptance and empathy for their patients as they struggle to incorporate new, healthier behaviours into their lives. Practitioners often find they can achieve results by choosing one skill to focus on at a time.

Coaching involves assessing the patient's desire to change. Three factors play a role; the readiness of the patient to change, the importance of the change to the patient, and the confidence the patient has in accomplishing the change.[5,10] The ability to correctly assess these factors hinges both on style and skill. The predominant style of coaching is guiding. Guiding finds the middle ground between telling the patient what to do and passively listening to their story by helping patients find their way. The skill set that helps the practitioner accomplish this is a combination of asking, informing, and listening.[5]

How Ready are They to Change?

Patients will come to the practice in various stages of change. Being able to identify where they fall on this continuum is one aspect of assessing their readiness to change. The importance of a change and the patient's perceived confidence in being able to cope with that change play a strong role in motivation or readiness to change.[10] The degree of readiness for change possessed by an individual has been conceptualised by Prochaska et al in his work on the stages of change.[11]

Patients in the **precontemplation** phase are actively resistant to change. They may deny they have a problem or the seriousness of the problem. In fact, they may think you or another person is the problem. An example of this is the patient who comes in only because their spouse made the appointment. They may tell you they just want you to 'clean' their teeth and that's it — no lectures. Defensiveness and demoralization are hallmark feelings.[11]

In the **contemplation** stage, patients are starting to become aware of their problem, and are trying to understand it. They are not ready to begin making a change just yet; they may feel stuck between wanting to change and wanting to resist. In fact, it has been observed that some people can stay stuck in the contemplation phase for years. An example of this is the patient who talks about stopping smoking but hasn't yet; they are waiting for the 'right' time. People in this phase begin to openly talk about their problems and actively seek reassurance.[11]

The **preparation** phase means that people are getting ready to take action. They are identifying specific steps that they are going to take, and making those steps public. A patient in this phase may tell you they are planning on seeing the periodontist. They may ask again for the name and number and even tell you how they are planning to fit in the treatment; time off from work, help from a family member. People at this stage are becoming hopeful although they may still harbour some ambivalence about change.[11]

The **action** stage is one of the easiest to identify because the behaviours people are adopting are often observable. The patient's oral health has improved because they are keeping regular appointments and using a Water Flosser. The mistake people often make in this stage is assuming that action is change and not recognizing the tremendous effort and energy that is required in this phase. Support and rewards are critical to helping the patient find success through action.[11]

Maintenance is the stage many patients are in.[12] They have taken action like using some type of interdental aid, but they still struggle a bit, sometime relapsing. Internal and external challenges such as being too tired at night to floss or going on holiday and taking a break from everyday routine can be derailments. While discouraging, relapse provides an opportunity for learning and reinforcing commitment to the action.[11]

Patients may seem to move back and forth between stages. Change is a process that is not linear but rather more like a spiral with the likely potential for relapses and set-backs. Assessing **importance** and **confidence** can assist practitioners as they determine readiness.[10]

As people move through the stages of change, their motivation will depend on how important the change is to them as well as the level of confidence they have in their ability to change. For change to occur, the patient must have a high level of both. The importance of change is related to the patients personal values especially the perceived benefit from changing. Confidence refers to the patient's perception of whether or not they have skills or even the where-with-all to accomplish the change. For example, a patient may believe that flossing is important to oral health, but if they believe flossing is too difficult, it's likely they won't do it.[10] A study by Tedesco et al supports this. They found patients believed in the importance of both brushing and flossing but because they lacked confidence in their ability to floss, they stated they forgot to floss, two or more times per week.[13] Stewart et al found that patients who were counseled using a stages of change intervention showed greater self-efficacy with dental floss.[14]

There are five stages of change relevant to dental care:[12]

- Precontemplation
- Contemplation
- Preparation
- Action
- Maintenance

Style and Skills

In regards to coaching, **style** refers to the attitude and approach that is taken in communicating with patients. Sometimes directing is required when you need to take charge and talk about a diagnosis or condition. Another type of style is following. This means listening passively or following their lead. This might be employed after a patient has been told 'bad news' or perhaps when they are relaying information about a previous unpleasant dental experience. A style that has been found to be very effective for coaching is one that seeks the middle ground between directing and following; **guiding**.[5]

Guiding has been shown to be particularly useful for behaviour or lifestyle changes. A guiding style focuses on strategies to get to a goal rather than what the patient is or is not doing right. With guiding, practitioners offer their patients alternatives but stop short of providing one solution. The practitioner serves as a resource by helping the patient see what is possible. At the same time, they recognise that the patient is an expert about their own life, and they allow them to make the choices they think will be most appropriate.[5] A guiding style in self-care would be communicating with a patient about the various ways that interdental cleaning could be accomplished and letting them make the product choice.

Communication skills play a crucial role in the guiding style. Data shows that people who are effective at this style use a balanced approach of **asking**, **listening**, and **informing**. The skilled coach practicing a guiding style learns to ask open ended questions, actively listens and shows respect for the patient's response, regarding facts, diagnosis, and the range of recommendations.[5]

THE PRACTICE OF COACHING PATIENTS

Moving from advice giving to coaching requires a mental mind shift. One way to begin this is to pay attention to language. Words are powerful. They can serve as the foundation to creating a coaching experience with patients. Consider the potential that the reframing of these statements creates.

Are you flossing?	Tell me, what you do to take care of your teeth?
You really need to use floss every day.	Help me understand your challenges with floss.
Let me show you again.	How can I help you?
If you don't do this, you will end up at the periodontist.	Can you give me an idea of how important this is to you — on a scale of 1 to 10?
I really want you...	What do *you* want?

This shift sometimes makes practitioners anxious about the time needed and the usefulness of the information uncovered. Initially, it is likely that coaching will require more time upfront as you move from telling to asking. However, if one adds all the time spent being stuck by having the same conversation over and over again, in the long-run, coaching saves time because it is a forward-moving process.

The language that the patient uses in answering the questions will provide insight into the readiness for change. Consider the following responses to the first question,

Precontemplation:
I don't want to talk about it — just clean my teeth.

Contemplation:
I brush every day, and I know I should do more, but it's just so hard.

Preparation:
Right now I'm just brushing but last time, you gave me a recommendation for a Water Flosser, and I've been thinking about it. I've looked at them in the shops, and I'm interested. Tell me about it again.

Action:
I bought the Water Flosser and have been using it every day! I'm eager for you to tell me how my mouth looks.

Maintenance:
I'm not as faithful with my routine as I have been in the past. My mum has been sick, and I've been so busy and tired.

"Tell me what you do to take care of your mouth."

The degree of readiness exhibited by the patient determines the appropriate strategy or response to reduce resistance and increase a commitment to action. Prematurely rushing a commitment to action can have the opposite effect. For example, if the practitioner counters the first response with "it's my job to tell you how to take care of your mouth, not just clean your teeth" the encounter will end up at an impasse, and both parties will be frustrated. On the other hand, if the practitioner says: "Okay, so I'm hearing you say that you just want the cleaning, and you aren't interested in any information on how to maintain your mouth? Would I be right in guessing that coming in today was a big enough step for one day? Could I ask you to think about it for next time?" This type of dialogue refrains from judging the patient or imposing the practitioner's agenda. Instead, it tells the patient that you heard and respect their wishes as well as acknowledging the challenge of coming in.

Learning to coach patients is a skill that can be developed with time and practice. A step-by-step approach can make the process seem less intimidating and more manageable. Practitioners are often surprised by the significance that one change in approach can make. The MI approach and stages of change interventions have been used successfully in the medical field to change behaviours for several years.[7,11] The few studies that have used these techniques to change dental behaviours have had positive results.[8,9,14] Coaching patients using MI and stages of change strategies has the potential for eliciting improved oral health behaviours.

MOVING BEYOND TRADITIONAL FLOSS

One way to begin coaching patients is in the area of interdental care. The mainstay of most self-care recommendations is dental floss. It is a core piece of most dental/dental hygiene education curriculum. It is reflected in television and magazine adverts; brush and floss. This leads to the perception that floss is superior to other types of interdental cleaning. Indication of this lies in the comment that is sometimes voiced by dental professionals when considering the merits of an alternative product: "I suppose it's better than doing nothing." This is contrary to the evidence which has demonstrated that alternative products can produce the same or even superior results when compared to dental floss.[15,16,17,18,19] Hujoel et al notes that dental floss has largely escaped the rigorous scientific evaluation that is required for pharmaceuticals and that its recommendation is founded more upon a 'common sense' approach.[20] The ability to be flexible and move beyond a traditional flossing recommendation is an ideal first step in learning to coach patients.

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The Evidence for Dental Floss

Few studies exist that have looked at the benefit of adding floss to toothbrushing.[16] An often cited paper on the efficacy of flossing is a two-week study by Graves et al. It compared toothbrushing alone to toothbrushing plus one of three different types of dental floss (waxed, unwaxed, tape). The participants came to the study facility each weekday to perform their assigned self-care under supervision. They performed the regimens on their own at home on the weekend. The results showed that the addition of dental floss, regardless of type, to toothbrushing was nearly twice as effective as toothbrushing alone (35% vs. 67%) in the reduction of gingival bleeding. The limitation of the study is that the flossing was supervised. Subjects missed no more than one session.[21] Whether similar results could be obtained with daily at-home unsupervised flossing is unknown. Other studies that employed an unsupervised flossing routine have not replicated this result.[16]

A systematic review of the efficacy of dental floss in addition to toothbrushing on plaque and gingival inflammation did not show a significant benefit from the addition of floss to toothbrushing. Eleven studies of a minimum of 28 days duration were included in the review. Four of the studies showed that the addition of flossing resulted in greater plaque reduction. For measures of inflammation, only one study had superior results for the reduction of bleeding.[16]

The Evidence for Alternative Mechanical Devices

Interdental brushes, toothpicks, wooden sticks, floss aids/holders, and automatic flossers are alternatives that have been compared to dental floss.[15,17,19] Systematic reviews have been conducted on interdental brushes[15] and wooden sticks.[17] Slot et al reviewed nine studies and found that interdental brushes remove more plaque than dental floss or brushing alone. There was no difference between the product and dental floss in reduction of gingival inflammation.[15] The Hoenderdos et al review on wooden sticks included eight studies. The results showed that the wooden sticks did not have an additional effect on the reduction of plaque or gingivitis, but it did reduce the bleeding tendancy.[17] Both reviews note that interdental brushes and wooden sticks are not applicable for every patient as an adequate embrasure space is required.[15,17]

Figure 1: Waterpik® Ultra Professional Water Flosser

Figure 2: Waterpik® Complete Care 7.0

Other products such as toothpicks, floss aids/holders, and automatic flossers are supported by select randomized clinical trials. Lewis et al compared toothbrushing plus a toothpick in a holder to toothbrushing plus dental floss and found that both groups significantly reduced plaque and bleeding.[22] Kleber and Putt conducted a cross-over study in which participants used dental floss and a floss-holding device for two-month periods. Both techniques were effective in reducing plaque and gingivitis.[23] Another cross-over study that compared a single use floss aid to traditional floss found similar reductions in plaque, gingivitis, and bleeding.[24] None of the trials included a toothbrushing only control.[22,23,24,25]

Evidence for a Water Flosser

A 28-day study by Rosema et al found that a Water Flosser, also known as a dental water jet or an oral irrigator, **(Figures 1, 2, 3)** paired with a manual toothbrush was twice as effective as manual tooth brushing and flossing in reducing bleeding and as effective at reducing plaque **(Figure 4)**.[25] These results confirm findings from a 4-week study by Barnes et al. They found that a Water Flosser paired with either a manual or power toothbrush was significantly more effective at reducing bleeding and gingivitis, and as effective at reducing plaque as manual brushing and flossing **(Figure 5)**. The effect was achieved with plain water and a Classic Jet Tip **(Figure 6)**.[26]

Figure 3: Waterpik® Cordless Advanced Water Flosser

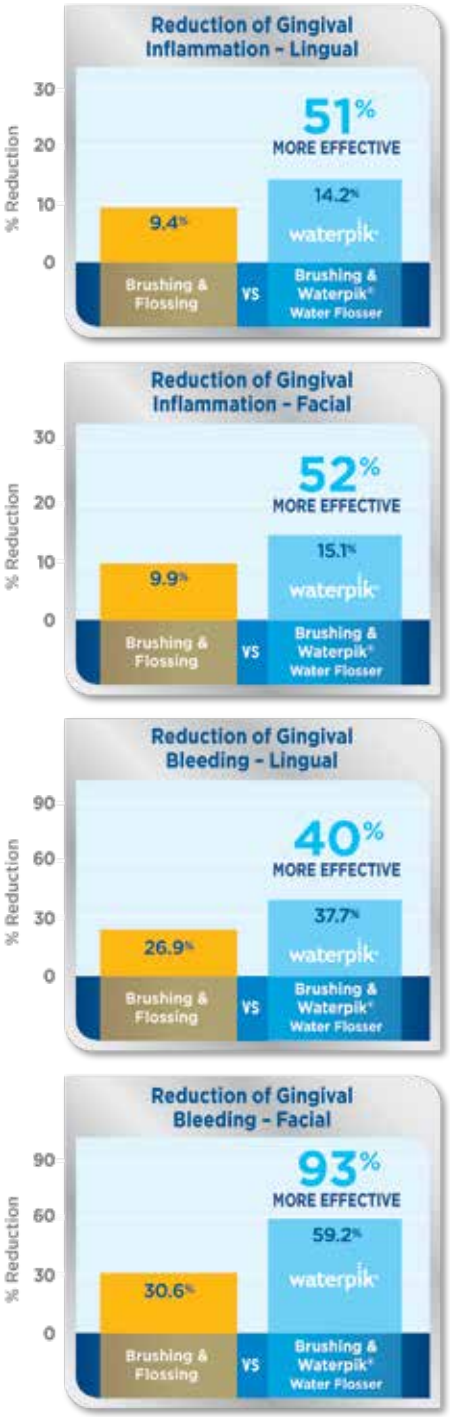

Figure 5: Reductions in gingival bleeding and inflammation

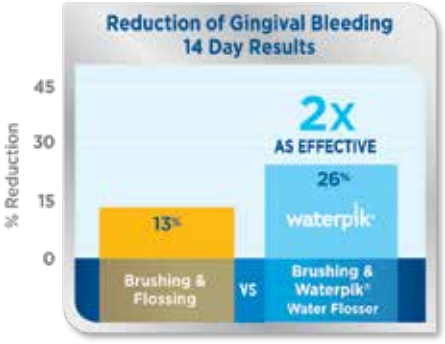

Figure 4: Chart from Amsterdam study

Figure 6: Classic Jet Tip

Figure 7: Orthodontic Tip

Orthodontic patients have been shown to significantly benefit from adding a Water Flosser to their daily routine. Sharma et al found that adolescents who used the Water Flosser with the Orthodontic Tip **(Figure 7)** removed 3.76 times as much plaque than those using dental floss and 5.83 times as much plaque than brushing alone. The Water Flosser reduced bleeding 84.5% from baseline. This was 26% better than with floss and 53% better than brushing alone **(Figure 8)**.[27]

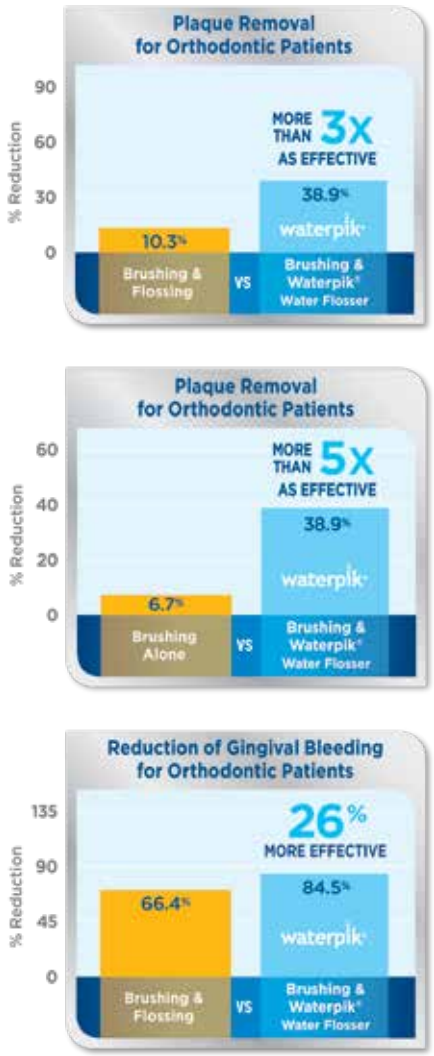

Figure 8: Reductions in plaque and gingival bleeding

In addition to string floss, the Waterpik® Water Flosser has been compared to an air driven flosser (Sonicare® Air Floss) in a 4-week RCT. The result showed that the Water Flosser was 80% more effective at reducing gingivitis and 70% more effective at reducing plaque. Specifically, the Water Flosser was twice as effective from the lingual surface and three times as effective at the gingival margin as Air Floss in removing plaque **(Figure 9)**.[28]

Numerous studies have shown that adding a pulsating Water Flosser to toothbrushing provides better reductions in bleeding and gingivitis over tooth brushing alone.[29-35] A systematic review by Hussein et al that included seven studies supports this. They found that adding a Water Flosser to tooth brushing provided better results in the reduction of bleeding and gingivitis than tooth brushing alone.[18]

The Water Flosser has also been shown to improve oral health significantly better than using a sonic toothbrush only. Goyal et al found that the addition of the Water Flosser to a sonic toothbrush (Waterpik® Sensonic® Professional Plus Toothbrush) provided improvements that were significantly better than using a sonic tooth only (Sonicare® FlexCare). Subjects who used a combination Water Flosser/Sonic Toothbrush product (Waterpik® Complete Care) **(Figure 10)** had better reductions in bleeding, gingivitis, and plaque; 70%, 48%, and 52% respectively after 4 weeks use. The study also compared the Complete Care regimen to a manual toothbrush only and found significantly better reductions for reducing bleeding (159%), gingivitis (135%) and plaque (134%) **(Figure 11)**.[36]

The plaque removing capability of the Water Flosser has been demonstrated in a study conducted at the University of Southern California Center for Biofilms. Investigators evaluated the effect of a three-second pulsating (1,200 per minute) lavage at medium pressure

Figure 10: Waterpik® Complete Care, Model WP-950W

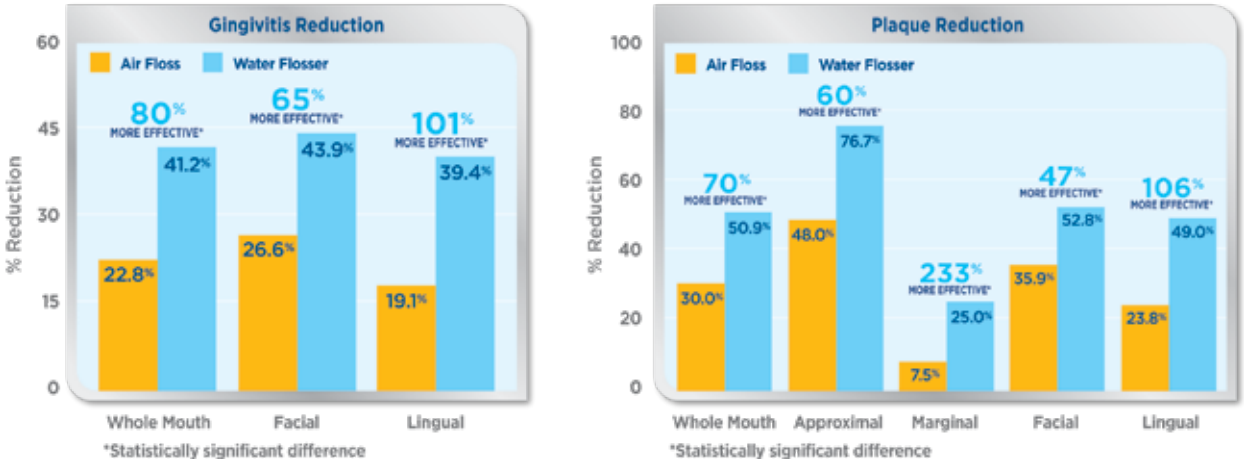

Figure 9: Water Flosser versus Air Floss; plaque and gingivitis reductions

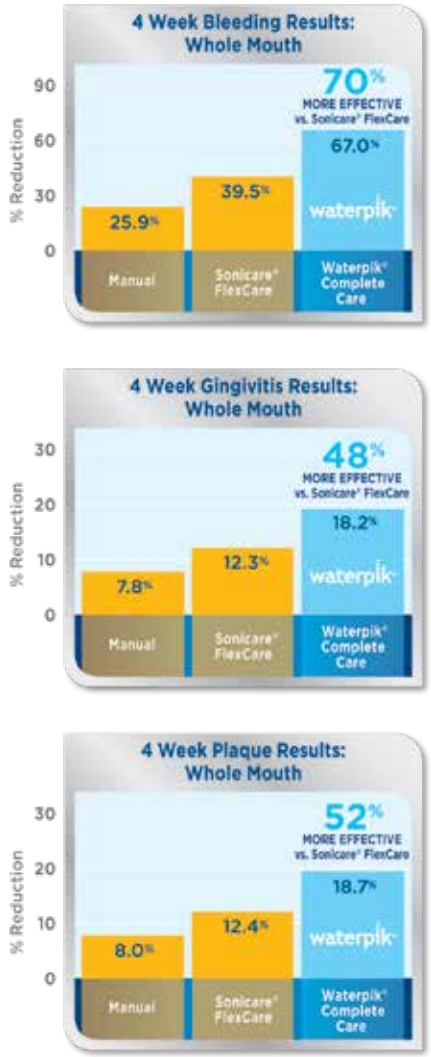

Figure 11: Waterpik® Complete Care versus Sonicare® FlexCare; bleeding, gingivitis and plaque reductions

on plaque biofilm using scanning electron microscopy (SEM). Eight periodontally involved teeth were extracted. Ten slices were cut from four teeth and inoculated with saliva and left for four days to further grow plaque biofilm (ex vivo). The results showed that the Water Flosser removed 99.9% of plaque biofilm **(Figures 12, 13)**. The researchers concluded that the hydraulic forces produced by the Water Flosser with 1,200 pulsations at medium pressure can significantly remove plaque biofilm from treated areas of tooth surfaces.[37]

Figure 12: Before treatment with the Water Flosser

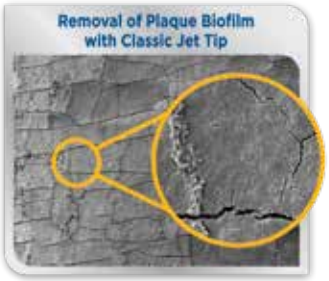

Figure 13: Tooth surface after 3-second treatment with Water Flosser

The Waterpik® Water Flosser has been evaluated in more than 55 studies. It has been shown to remove plaque[25-29,31,36,37] and reduce bleeding,[18,25-36] gingivitis,[18,26,29-33,35,36] periodontal pathogens,[30,38] and inflammatory mediators.[29,31] The studies indicate it is beneficial for patients in periodontal maintenance[33,35] as well as for those with gingivitis,[30] orthodontic appliances,[28] implants,[39] crown and bridge,[40] and diabetes.[29]

There are six different tips available for the Water Flosser **(Figure 14)**. Most studies have been conducted using the Classic Jet Tip. There are three other additional tips that have been scientifically evaluated that can be recommended to a patient for a customised regime. The Pik Pocket® Tip is a soft, latex-free, site-specific tip that can reach up to 90% of a periodontal pocket[41] and has been shown to reduce subgingival pathogens.[42] The Orthodontic Tip features small tapered bristles. It has been demonstrated to enhance plaque removal.[27] The newest tip, the Plaque Seeker® Tip features an innovative new design to help remove even more stubborn plaque from hard to reach areas.[25]

Figure 14: Six Unique Tips for Individual Needs

Classic Jet Tip: Good for general cleansing

Orthodontic Tip: Perfect for orthodontic appliances

Plaque Seeker® Tip: Best for veneers, implants, crowns, and bridges

Tongue Cleaner: For fresher breath

Pik Pocket® Tip: Ideal for periodontal pockets, furcations, hard to access areas, delivery of medicaments

Toothbrush Tip: For patients who want to brush and water floss simultaneously

For more information on the Water Flosser research see the self study called *The Water Flosser: An Evolutionary Step in Interdental Care.*

Summary

Getting patients to comply with self-care recommendations is often frustrating for both the practitioner and the patient. The traditional 'tell, show, do' approach is not effective; only about one third of patients floss on a regular basis. A new approach to behaviour change is motivational interviewing. This method is a coaching style that uses behaviour change strategies based on a patient's readiness to change.

Moving beyond the traditional floss recommendation is one way practitioners can begin learning to coach patients. Many types of interdental aids have been shown to work as well as dental floss. These include interdental brushes, toothpicks, wooden sticks, and floss aids/holders, automatic flossers, and a pulsating Water Flosser.

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POST TEST COURSE #11-2UK
Coaching Your Patients to Optimal Interdental Health

1. **Approximately how many adults use floss or interdental aids on a regular basis?**
   a. 20.4%
   b. 32.9%
   c. 43.8%
   d. 51.7%

2. **People sometimes underestimate their own personal risk for a condition or disease. They also overestimate the skills they have to limit the risk.**
   a. Both statements are true
   b. The first statement is true; the second is false
   c. The first statement is false; the second is true
   d. Both statements are false

3. **How does fear interfere with compliance?**
   a. It may produce denial
   b. It interferes with attention
   c. It reduces retention
   d. All of the above

4. **The underlying premise for motivational interviewing is:**
   a. All patients have the potential for change
   b. If patients know what to do they will do it
   c. Patients who don't follow advice are lazy
   d. Dismiss any patient who doesn't follow advice

5. **MI has been shown to outperform traditional advice-giving in the treatment of:**
   a. Weight loss
   b. Lowering cholesterol
   c. Reducing early childhood caries
   d. All of the above

6. **An acronym for the four guiding principles of MI is RULE. This stands for:**
   a. Reframe, Uncover, Learn, Excite
   b. Resist, Understand, Listen, Empower
   c. Routine, Utilise, Leverage, Explain
   d. Repeat, Unify, Lighten, Expect

7. **Two factors in a person's readiness to change are:**
   a. Time and money
   b. Importance and confidence
   c. Knowledge and skills
   d. Age and gender

8. **The Stages of Change are:**
   a. Protagonist, Cooperator, Propagator, Author, Mentor
   b. Pontificate, Consider, Proceed, Announce, Measure
   c. Pre-contemplation, Contemplation, Preparation, Action, Maintenance
   d. Placate, Comply, Prioritize, Agree, Mend

9. **A guiding style focuses on: Strategies to get to a goal. How fast the patient accomplishes those strategies.**
   a. Both statements are true
   b. The first statement is true, the second is false
   c. The first statement is false, the second is true
   d. Both statements are false

10. **People who are effective at the guiding style use which mix of asking, listening, informing:**
    a. Heavier on asking, lighter on listening and informing
    b. Heavier on listening, lighter on asking or informing
    c. Heavier on informing, lighter on asking and listening
    d. Balanced for asking, listening, and informing

11. **Dental floss has largely escaped the rigorous scientific evaluation that is required for drugs; Its recommendation is more founded upon a 'common sense' approach.**
    a. Both statements are true
    b. The first statement is true; the second is false
    c. The first statement is false; the second is true
    d. Both statements are false

12. **A systematic review of the efficacy of dental floss in addition to toothbrushing found:**
    a. Better plaque removal compared to toothbrushing alone
    b. Better reduction in inflammation compared to toothbrushing alone
    c. Better reductions in plaque and inflammation compared to toothbrushing alone
    d. No significant different in reductions of plaque and inflammation compared to toothbrushing alone

13. **Which products have been shown to work as well as dental floss?**
    a. Wooden sticks
    b. Interdental brushes
    c. Power flossers
    d. All of the above

14. **When compared to traditional brushing and flossing, the Water Flosser was?**
    a. More effective in removing plaque and reducing bleeding and gingivitis
    b. As effective in removing plaque and more effective in reducing bleeding and gingivitis
    c. Less effective at removing plaque; as effective in reducing bleeding and gingivitis
    d. Less effective at removing plaque and reducing bleeding and gingivitis

15. **A three-second pulsating lavage with a jet tip at medium pressure removed what percentage of plaque biofilm as viewed by scanning electron microscopy (SEM)?**
    a. 39.9%
    b. 59.9%
    c. 79.9%
    d. 99.9%

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Please circle the correct answer for each question.

1.	a	b	c	d
2.	a	b	c	d
3.	a	b	c	d
4.	a	b	c	d
5.	a	b	c	d
6.	a	b	c	d
7.	a	b	c	d
8.	a	b	c	d
9.	a	b	c	d
10.	a	b	c	d
11.	a	b	c	d
12.	a	b	c	d
13.	a	b	c	d
14.	a	b	c	d
15.	a	b	c	d

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